

The Effect of Stress on Self-Reported Academic Performance Measures
Among Hispanic Undergraduate Students at Arizona State University

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Approved April 2012 by the
Graduate Supervisory Committee:

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ARIZONA STATE UNIVERSITY

May 2012

ABSTRACT

Research on the impact of stress on the academic performance of Hispanic undergraduate students is limited, leaving institutions of higher education without needed information about how to better support this growing population of students. The purpose of this study was to identify stressors that have a negative impact on academic performance of Hispanic undergraduate students. Themes were derived from focus groups and interviews regarding stress, stressors and related academic performance impacts of Hispanic undergraduate students attending a large multi-campus urban university and incorporated into a survey addressing common stressors, their impact on academic performance, stress impact on other areas of life, stress management ability, and demographic characteristics. The survey was administered to a random sample of Hispanic undergraduate students using an online format (n = 169). Descriptive statistics were used to examine frequencies. Stressors were placed into themes and tested for reliability of fit using Cronbach's Alpha. Pearson's Chi-Square and Cramer's V were used to measure association. Significance was set at $\leq .05$. Overall stress of respondents resulted in serious performance effects among 32.5% of respondents and moderate performance effects among 43.8% of respondents. Stress impeded academic performance at least weekly among 36.1% of respondents. Stressors resulting in the most serious stress and academic performance effects included family, time factors, finances, and academics. Moderate stress and academic performance effects were evident in stressors related to mental health, technology, commuting,

personal concerns, physical health and legal problems. The majority of respondents indicated doing a fair (n = 84, 49.7%) or good (n = 52, 30.8%) job managing stress. The remaining 20.0% (n = 33) of respondents did a poor job managing stress. Students with lower grade-point averages managed stress poorly compared to students with higher grade-point averages, $X^2(6, N = 163) = 15.222, p = .019, \text{Cramer's } V = .019$. These findings provide evidence that stressors related to family, time factors, finances, and academics, and overall stress have considerable negative effects on the academic performance of Hispanic undergraduate students. Institutions of higher education can improve academic outcomes among this student population by addressing and reducing the impact of common stressors affecting these students.

DEDICATION

This work is dedicated to my family, my friends and my colleagues. I have come this far in life with you by my side. Thank you.

ACKNOWLEDGMENTS

I could not have accomplished this work without my family, my friends and my colleagues who have encouraged me and tolerated my absences from social and family celebrations. You are my world.

Thank you to my mentors, Dr. de los Santos, Dr. Ewing and Dr. Melnyk. I am grateful for the different perspectives you have brought to this project. You inspire me. I can only hope to contribute as much social good through my work and you do through yours.

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CHAPTER 1

INTRODUCTION

In recent years, there has been increased attention to the relationship between health and learning among college students. Faculty and staff often observe the negative impact on attendance and academic achievement that results when students are tired, sick, hung over, depressed, or worried. Of particular concern is the level of stress that college students report and how stress affects student success. Results of the American College Health Association-National College Health Assessment I and II (ACHA-NCHA) over the past ten years indicate that the academic performance of more than 25% of college students is negatively affected by stress (American College Health Association, 2012). Other factors related to stress, such as sleep difficulties, anxiety, depression, relationship difficulties, work, finances, and concern for a troubled friend or family member are among the top health-related academic impediments endorsed by college student respondents to the ACHA-NCHA (American College Health Association, 2011).

Statement of the Problem

National concern about college student stress is based upon studies dominated by White, non-Hispanic subjects (American College Health Association, 2011; Andrews & Wilding, 2004; Servaty-Seib & Hamilton, 2006). Only a few studies describe the relationship of stress and academic performance

among Hispanic¹ college students (Castillo & Hill, 2004; Rodriguez, Myers, Morris, & Cardoza, 2006; Smedley, Myers, & Harrell, 1993; Sy, 2006). Yet, Hispanic student enrollment in college is growing to such an extent that the demographics at many institutions in the southwest are shifting to include a significantly larger proportion of Hispanic students than in previous years (Passel & Cohn, 2008; Passel, Cohn & Lopez, 2011; Pew Hispanic Center, 2011). Information about how stress may be different among this growing student population would aid institutions of higher education in providing stress-reducing programs and services to support Hispanic student academic success. This is particularly relevant given that data from several large studies indicate that Hispanic students are less likely to be retained, less likely to graduate and less likely to get graduate degrees than are White, non-Hispanic students (Fry, 2004; Ryu, 2009).

As a leader in college health promotion at Arizona State University in the department of ASU Wellness, this researcher observed that the lack of information on Hispanic student stressors was limiting the ability of college health promotion personnel at the university and institutions of higher education nationally to fully support the academic success of the growing Hispanic student population. Furthermore, national discussion about the negative impact of stress on academic performance measures overlooked the likelihood that minority students may have different experiences than do White, non-Hispanic students. Until recently, the number of Hispanic students who responded to the Arizona

¹ Throughout this proposal, Hispanic is the prominent word used to represent Hispanic, Latino and Latina people and the many identities that make up this ethnic label. Other terms are used in reference to specific uses or citations used.

State University ACHA-NCHA I and II (ASU ACHA-NCHA) was too small to draw any meaningful conclusions from the data. However, a recent examination of the ASU ACHA-NCHA II and supplemental stress questions developed by ASU Wellness revealed that a greater percentage of Hispanic students experience stress as an academic impediment than do White, non-Hispanic students, and that Hispanic student stressors vary from the stressors reported by White, non-Hispanic students (Moses, 2011). A more in-depth study of Hispanic student stress would improve the potential for addressing and reducing negative stress among this student population at this university.

Overall, there is limited information on how stress and stressors influence the academic performance of Hispanic students. Furthermore, there are very few recent studies addressing these matters, leaving institutions of higher education without needed information about how to better support Hispanic students during this time when enrollment by this population of students is dramatically increasing. Efforts to understand and reduce Hispanic student stress may contribute to better academic outcomes for these students.

Purpose of the Study

The purpose of this study was to identify stressors that have a negative impact on self-reported academic performance and persistence measures among Hispanic undergraduate students. The aim was to use the study results to raise awareness of the stressors and the academic effects of stress within this student population. The anticipated outcome of the research was recommendations leading to actions to improve academic success among Hispanic undergraduate students.

Research Question

The primary research question that guided all aspects of this study was: What stressors have a negative influence on self-reported academic performance measures among Hispanic undergraduate students at Arizona State University? Secondary questions included (a) How do Hispanic undergraduate students rate their stress management skills, and (b) What is the association between common stressors, negative performance outcomes, and demographic characteristics of Hispanic undergraduate students at Arizona State University?

Study Limitations

The limitations of this study include:

1. Of the 314 undergraduate Hispanic students who responded to the survey invitation, 145 (46.1%) quit the survey prior to its midpoint. The demographics of this group were unknown, and this data was excluded in the analysis. Remaining subjects were 8.4% of the random sample.
2. Analysis of relationships between variables within the data was limited due to low cell counts in the chi-square analysis.
3. The survey questions were organized such that stress and its effects were covered before stress relief activities and demographics. In addition, the survey took considerable time for some respondents to complete. This may have contributed to the low completion rate. Respondents who chose to complete the survey may have had personal characteristics different from non-completers.

4. Study participants were students at a large urban university, and represented four campuses at multiple locations. Stress and its performance effects as identified in this study may not be relevant among undergraduate Hispanic students from institutions of higher education in other environments.
5. The study was limited to self-reported assessment of academic performance measures, grade-point average and stress effects.
6. The study was limited to Hispanic undergraduate students. Results may not apply to other student populations.
7. Study participants were informed of the study focus on stress, which may have influenced their decision to participate in the study.
8. The investigator was a White Caucasian of Western European ancestry with a surname that matches this identity. This may have reduced willingness to participate by some members of the study population.

Dissertation Organization

This dissertation describes the development, implementation, results and recommendations of a survey that was designed to identify common stressors and their academic performance impacts among undergraduate Hispanic students attending Arizona State University. The Literature Review that follows will examine the rationale for the study. The Methods chapter describes action research and the research design for the three Phases of the study: survey development, survey administration and analysis, and dissemination of findings and recommendations. Results are presented by Phase, with the results of

Phase One being stressor themes, the results of Phase Two being survey findings, and the results of Phase Three being recommendations. This is followed by a discussion of the findings, recommended actions based on the study, recommendations for future research, references, and appendices.

CHAPTER 2

LITERATURE REVIEW

This chapter provides a review of (a) past research on stress and academic performance among college students, (b) enrollment and graduation growth among Hispanic students at institutions of higher education, (c) stress and academic performance of Hispanic college students, and (d) a description of and findings from a pilot study that examined Hispanic student stress and academic performance effects.

Stress and Academic Performance in College

Stress is a collection of physical, mental, and emotional responses that occur when we encounter something new, challenging, dangerous or exciting (Selye, 1978). Stress can be experienced as a positive or negative force in one's life. Positive stress, or eustress, can heighten awareness, improve performance and motivation (Selye, 1978). Negative stress, or distress, can impede performance, reduce concentration and motivation, and contribute to poor health (Selye, 1978).

A stressor is a factor that influences a stress response to occur (Selye, 1978). A study by Ross, Niebling, and Heckert (1999) found that the most frequent stressors among college students were a change in sleeping habits, vacations/breaks, change in eating habits, new responsibilities, and increased class workload. Stressors most predominantly reported by students at Arizona State University include academic responsibilities, career issues, being overcommitted, finances, and intimate relationships (Moses, Pabedinskas, & Eli, 2010).

Some scholars suggest that eustress may have beneficial effects on academic performance among college students; however, studies on this subject are limited (Joo, Durband, & Grable, 2008). Stress that has a negative impact on academic functioning is the concern of this study. This type of stress, or distress, can lead to difficulty concentrating, anxiety, frustration, irritability, moodiness, feeling overwhelmed, restlessness or fatigue, or a change in behavior or routines (Selye, 1978). These symptoms may have a negative influence on academic performance. Indeed, studies provide evidence that stress can impede academic performance.

Results of the American College Health Association-National College Health Assessment I and II (ACHA-NCHA) over the past ten years indicate that the academic performance of more than 25% of college students is negatively affected by stress (American College Health Association, 2012). Other factors related to stress, such as sleep difficulties, anxiety, depression, relationship difficulties, work, finances and concern for a troubled friend or family member have also been shown to impede academic performance (American College Health Association, 2010; Andrews & Wilding, 2004; Joo, Durband, & Grable, 2008; Kelly, Kelly, & Clanton, 2001; mtvU & Associated Press, 2009; Servaty-Seib & Hamilton, 2006; Trockel, Barnes, & Egget, 2000).

Hispanic College Student Enrollment and Graduation

Hispanics are the fastest growing minority group in the United States, accounting for 56% of the nation's growth from 2000-2010 (Passel, Cohn, & Lopez, 2011). In the 2010 U.S. Census, Hispanics made up 16.3% of the total population (Passel, Cohn, & Lopez, 2011). Hispanics are projected to make up

19.2% of the U.S. population in 2020, and 29.2% in 2050 (Passel & Cohn, 2008). Most Hispanic people in the United States live in nine states, including Arizona. However, the dispersion of Hispanics is accelerating across all states (Passel, Cohn, & Lopez, 2011). In Arizona, Hispanics make up 30% of the total population, up from 25% in 2000 (Pew Hispanic Center, 2008; Pew Hispanic Center, 2011). The number of Hispanic Arizonans increased from 1.29 million in 2000 to 1.89 million in 2010, a 46% increase (Pew Hispanic Center, 2008; Pew Hispanic Center, 2011).

Hispanic enrollment in college reflects the growth in population. In 2007, 26.9% of traditional-aged college students ages 18-24 were Hispanic, compared to 21.7% in 2000 (Ryu, 2009). This trend is likely to continue due to the growing U.S. Hispanic population and the increasing high school graduation rate of this group (Ryu, 2009). In Arizona, enrollment of Hispanic students in colleges and universities reflects a similar trend. The number of Hispanic graduates from public high schools in Arizona is expected to double in the decade following the 2004-2005 school year, due in part to population growth and in part to better high school graduation rates (Western Interstate Commission for Higher Education, 2008). Increase in high school graduation rates of Hispanic students is expected to contribute to the growth in college enrollment by Hispanic students (WICHE, 2008). Arizona State University presents a similar picture of Hispanic enrollment. In fall 2004, 12.8% of undergraduate students at Arizona State University identified as Hispanic, compared to 18.7% in fall 2011 (ASU, 2011). During the same period of time

Hispanic graduate student enrollment at Arizona State University grew from 7.2% to 9.5% (ASU, 2011).

Hispanic college students have lower persistence and graduation rates than do White, non-Hispanic students. White, non-Hispanic students who begin at community colleges are almost twice as likely as Hispanic students to finish a bachelor's degree (Fry, 2004). Of those students who attend non-selective colleges, 81% of White, non-Hispanic students and 57% of Hispanics earn their bachelor's degree (Fry, 2004). In contrast, Hispanic undergraduates attending highly selective colleges and universities graduate at the same rate as their White, non-Hispanic peers; however, most Hispanic undergraduates (60%) attend non-selective institutions (Fry, 2004). U.S. Hispanics are lagging behind in their attainment of four-year degrees. In 2007, only 11.2% of Hispanic adults ages 25-29 had a bachelors' degree, compared to 32.6% of White, non-Hispanic adults in this age group (Ryu, 2009). Furthermore, Hispanic undergraduates whose parents did not attend college are less likely to be retained and less likely to graduate (Choy, 2001; Tym, McMillion, Barone, & Webster, 2004). These data raise social and economic concerns.

Disparities in college enrollment, persistence and graduation limit professional and financial prospects within the Hispanic community, which contributes to continued disparity (Miller, Ozturk, & Chavez, 2005). Ninety percent of the fastest growing jobs in the current knowledge-based economy require postsecondary education (U.S. Department of Education, 2006). The U.S. economic future is dependent on the education and workforce preparedness of our diverse citizens (Bowen, Kurzweil & Tobin, 2006; U.S. Department of

Education, 2006). Hispanic people are essential to a healthy U.S. economy and society. The realization that nearly one in six people in the U.S. and nearly one in three people in Arizona are Hispanic, and that the Hispanic population within the U.S. is growing, should stimulate actions toward resolving these identified educational achievement disparities. Information about which stressors interfere with Hispanic undergraduate academic performance could result in enhanced programs, policies, and services to support the academic achievement of these students.

Stress and Academic Performance of Hispanic Students

National concern about college student stress and its influence on academic performance is based upon studies dominated by White, non-Hispanic subjects. A frequently cited reference for college student stress is the American College Health Association-National College Health Assessment I and II (ACHA-NCHA). Data from the spring 2011 ACHA-NCHA II indicate that 27.5% of students reported that stress had interfered with their academic performance, evidenced by receiving a lower grade on an exam or important project, a lower grade in a course, an incomplete or dropping a course, or experiencing a significant disruption in graduate work (American College Health Association, 2011). This survey included 129 campuses and 105,781 participants, of which 72.5% identified as White, non-Hispanic, and 7.8% identified as Hispanic. Of those studies cited previously in this review that included minority demographic information, participation by White, non-Hispanic students ranged from 78.4% to 87% (Andrews & Wilding, 2004; Servaty-Seib & Hamilton, 2006).

Stressors thought to interfere with academic performance among Hispanic college students include isolation from family support, family responsibilities, low income, and minority-status stressors (Castillo & Hill, 2004; Smedley, Myers, & Harrell, 1993; Sy, 2006). Sy (2006) found that freshman Latina students who spent more time with family had better grade-point averages and lower levels of school-related stress, whereas students who frequently served as translators for their parents experienced more school-related stress. Latinas who worked more experienced more school-related stress, but this did not have a significant effect on grade-point average (Sy, 2006). Castillo and Hill (2004) found that Chicana undergraduates with higher income and social support had higher grade-point averages and lower levels of distress. Smedley, Myers, and Harrell (1993) found that stressors common to all college students, such as academics, adjusting to college life, romance, living situation and family, were correlated with psychological distress among minority freshmen, but these stressors did not contribute to poor academic outcomes. However, minority-status stressors, including interracial, racism, achievement, within-group and social climate stresses were found to have a negative effect on grade-point average (Smedley et al., 1993).

As Hispanic enrollment increases, it will be important to understand how an increased Hispanic presence on campus affects stressors related to acculturation and minority-status. Rodriguez, Myers, Morris, and Cardoza (2006) conducted a study to determine whether acculturation stress and minority-status stressors would be offset on a campus where non-White and Hispanic students constitute the largest group. For the purposes of their study, acculturation stress

subscales included language proficiency, cultural identity, and partaking in language specific activities, cultural self-consciousness, and family conflicts; whereas minority-status stress subscales included college climate, ethnic discrimination and intra-ethnic group pressures (Rodriguez et al., 2006). This study did not address the association between stress and academic performance measures. Findings from this study indicate that generic college stresses, especially social and academic stresses, contributed to Hispanic psychological distress. Acculturative stresses made a significant additional contribution to psychological distress, whereas minority-status stresses did not (Rodriguez et al., 2006).

Pilot Study

The American College Health Association--National College Health Assessment II (ACHA-NCHA) is administered at Arizona State University annually in the spring to a random sample of students from all four associated campuses in the metropolitan Phoenix area. Results of the national ACHA-NCHA I and II provide a perspective on the health of college students and provide information on the effects of selected health behaviors, conditions, and experiences on academic performance (American College Health Association, 2011). The survey is administered via web survey to Arizona State University students through the American College Health Association. ASU Wellness conducts the survey and analyzes the data to examine trends in students' health behavior, conditions, and experiences in order to match programs and services with students' needs (ASU Wellness, 2011). Annual administration of the ACHA-NCHA II has been approved by the Arizona State University Institutional Review Board with exempt status.

Based on previous response rates of 10-14%, invitation to take the ACHA-NCHA II edition of the web survey in spring 2009 was sent to a random sample of 20,000 students. As an incentive to take the survey, participants who completed the survey were invited to open a hyperlink after survey completion to enter their email in a drawing for one of five \$200 awards, provided in Sun Dollars on their ASU Sun Card. Supplementary questions were developed at ASU Wellness and added to the ACHA-NCHA II in order to further assess stress and academic performance measures (Moses, Pabedinskas & Eli, 2009).

Pilot study findings. The survey yielded an 11% response rate, which is consistent with previous web surveys administered through ASU Wellness. A total of 2,238 students completed the survey. This pilot study examined the responses to questions about stress by undergraduate students who identify as White, non-Hispanic (n=1,508) or Hispanic/Latino (n=232).

Data from the 2009 ASU ACHA-NCHA II indicate that a greater proportion of Hispanic undergraduate students experience stress as an academic impediment (33.7%) than do White, non-Hispanic undergraduate students (29.1%). Furthermore, a greater proportion of Hispanic undergraduates indicate their academic performance was negatively affected by factors that can contribute to stress:

- 38.9% of Hispanic undergraduates reported being overcommitted as an academic impediment compared to 31.1% of White, non-Hispanic undergraduates.

- 26.9% of Hispanic undergraduates reported sleep difficulties as an academic impediment compared to 22.9% of White, non-Hispanic undergraduates.
- 17.2% of Hispanic undergraduates reported relationship difficulties as an academic impediment compared to 12.4% of White, non-Hispanic undergraduates.
- 19.5% of Hispanic undergraduates reported concern for a troubled friend or family member as an academic impediment compared to 11.6% of White, non-Hispanic undergraduates.
- 14.1% of Hispanic undergraduates reported financial concerns an academic impediment compared to 9.9% of White, non-Hispanic undergraduates.

Despite the observation that a greater proportion of Hispanic students perceive that stress, being overcommitted, relationship difficulties, and financial concerns contributed to negative academic outcomes, there was only a slight difference between the proportion of Hispanic and White, non-Hispanic students who reported high or very high stress caused by being overcommitted (22.3% v. 24.2%), intimate relationships (15.1% v. 14.1%), and having financial concerns (21.6% v. 22.4%). Compared to Hispanic students, White, non-Hispanic students report more serious stress levels (high or very high levels) attributed to academic responsibilities (29.9% v. 36.0%), career issues (16.0% v. 19.1%), physical appearance (8.6% v. 11.1%) and roommate difficulties (2.7% v. 5.3%). Hispanic students reported more serious stress levels when compared with

White, non-Hispanic students relative to academic processes (13.4% v. 10.0%), family problems (11.8% v. 8.8%), and sleep difficulties (11.9% v. 8.3%).

The level of stress that Hispanic students attribute to the specific stressors addressed in the pilot study is not high enough to explain why stress and stress-related factors had a negative effect on academic performance for a greater proportion of Hispanic than White, non-Hispanic students. This finding suggests that the current survey does not adequately address Hispanic students' experiences of stress, perceptions of stress, and which stressors have a more negative influence on self-reported academic performance measures. The aim of the current study is to fill this information gap.

CHAPTER 3

METHODS

This study was implemented using an action research design to examine stress and its impact on self-reported academic performance and persistence measures among Hispanic undergraduate students at Arizona State University. The study was implemented in three phases. During Phase One focus groups and interviews of Hispanic undergraduate students were conducted to inform survey development. During Phase Two the resulting survey was administered and analyzed. During Phase Three a group of key stakeholders from the university were presented with preliminary findings and potential actions resulting from the findings were discussed. The study was approved by the Arizona State University Institutional Review Board with exempt status (Appendix A). This chapter describes action research, the methods used for each phase of the study and for statistical analysis.

Action Research

Action research is a collection of processes whereby practitioners generate knowledge leading to social benefit (Bargal, 2008; McNiff & Whitehead, 2002). It differs from traditional research in that the researcher has knowledge and experience of the research setting and has a will to change a social situation, whether in education, health, or another social setting (McNiff & Whitehead, 2002). Action research is performed through a repetitive cycle of problem identification, diagnosis, planning, intervention and evaluation, with the aim of making ongoing improvements within the process to achieve the desired outcomes (Dickens & Watkins, 1999). Participation by members of the

community for whom the research is intended holds an important role in action research (McNiff & Whitehead, 2009). In addition, the experience and reflections of the researcher inform the process and written reports of the study (McNiff & Whitehead, 2009). This study was suitable for action research in that the investigator had more than 22 years of experience as a practitioner at Arizona State University in college health promotion at the time of the study, and had served as a leader in national associations concerned with health in higher education.

Impetus for the study was based upon the investigator's observation of a lack of both campus specific and national attention to the experience of stress and its effect on measures of academic performance among minority students. The aim of the study was to shed light on the experiences of stress among Hispanic undergraduate students at Arizona State University as a foundation for the development of programs, services, policies, and tools that can help to mitigate the negative effects of stress on academic performance measures within this student population. ASU Wellness has historically used a cyclical model to identify health priorities, plan, implement, evaluate and improve programs to achieve desired outcomes, which is similar to the conceptual model of action research. Furthermore, the researcher had previously developed partnerships with students, staff, faculty, and other key stakeholders at Arizona State University and was involved in national associations positioned to develop and/or enhance programs, services, policies, and tools to meet the needs of Hispanic college students identified through this study.

Particularly relevant to this study, the researcher was a member of the national committee that developed the ecological model designed for use by colleges and universities through the National Association of Student Personnel Administrators (NASPA) that was used in this project (National Association of Student Personnel Administrators, 2004). The researcher has provided training in use of the NASPA ecological model at national and regional conferences and as a consultant to institutions of higher education. The researcher has overseen the administration of the American College Health Association-National College Health Assessment I and II at Arizona State University since spring 2000 and has used this instrument to track health behavior trends, plan programs and advocate for programs and services to meet the needs of students identified through survey data. The researcher served as Project Director for the Campus Care Suicide Prevention grant funded program at Arizona State University for six years. In this role, the researcher provided leadership in design, implementation and evaluation of programs and services to reduce stress and distress among students at Arizona State University, including minority students. Evaluation of the various strategies implemented as a part of the Campus Care Suicide Prevention program was conducted to contribute to ongoing improvement of outcomes. Thus, the researcher had considerable experience in many of the processes inherent in action research and to this study. One major difference was the practice of including reflections of the researcher in the research reports. In line with action research, reflections regarding the research process and findings were incorporated into the study process by the investigator in order to

personalize the research journey and contribute to the qualitative information produced in this study.

Experienced practitioners bring assumptions and biases to action research projects. Assumptions and biases held by this researcher included:

- Negative health behaviors and experiences are often caused by or influenced through factors outside of the individual. Therefore, it is important to look beyond the individual to identify the causes of stress and to reduce its negative impact.
- The magnitude of the effect of stressors on academic performance will vary with students' racial/ethnic group identity.
- University administrators and deans interested in the success of Hispanic students need data to show the negative impact of stress on their academic performance as a rationale for using resources to take action to reduce and relieve stress to improve outcomes among Hispanic students.
- If Hispanic students are armed with skills to address common stressors and reduce stressors in the environment, this will improve their own stress levels and contribute to their community's health and well-being.
- Programs, services and other changes that result from this study will be evaluated for their impact on stress and academic performance.
- Student services and academic success classes have a positive impact on student success.

Research Design

The study was implemented in three phases: survey development, survey administration and analysis, and dissemination of findings and

recommendations. McNiff and Whitehead (2002) describe action research as a form of relational practice, requiring participatory processes. This study involved undergraduate Hispanic students in each phase. They provided information about common stressors and stressors that impede academic performance among their peers through focus groups and interviews. They assisted with survey development by providing feedback about the pilot survey to ensure it was on the mark for relevant issues and language. They reviewed a report of the findings and suggested recommendations to include in the report submitted to key stakeholders. The students' perceptions, voice and input was key to the survey development and recommendations made.

Phase One—Survey Development

The plan for Phase One of the study was to conduct two focus groups involving 12-16 Hispanic undergraduate students to gain information about common stressors and stressors that impede academic performance among the participants and their Hispanic peers. Purposeful sampling methods were used to identify and invite students to participate in the focus groups. The aim of purposeful sampling is to identify subjects who can provide the most pertinent information for the study (Merriam, 2009, p. 77). In this case, Hispanic undergraduate students were sought out through student service departments that provide academic support services for Hispanic students at Arizona State University. An invitation to participate in the focus groups was sent out to this student population through the researcher's professional contacts within these programs. In addition, two programs provided email lists to the researcher of more than 600 undergraduate Hispanic students. To make focus group

participation convenient for potential participants, dates and times were set after students responded to the invitation, according to the availability of greatest number of participants. While students who agreed to participate were invited to ask their friends to participate, they did not comply with this action. Refreshments were served during the focus groups (water, soda and snacks).

The first focus group included four female participants. These students reported having a high academic standing, and all were recipients of a scholarship program known to provide a high level of academic support for its scholars. In order to learn information from a broader subject pool, the researcher used the university student data-base to identify and invite Hispanic undergraduate students who were on academic probation to participate in subsequent focus groups for this study. Furthermore, the researcher made personalized email contacts with every male undergraduate Hispanic student who responded to the focus group invitation to ensure male representation in the study. These actions reflect the concept of "maximum variable sampling" which is intended to draw participants representing a wide variation of experiences within the central or shared characteristics targeted in the study (Merriam, 2009, p. 79).

Ultimately, after one failed focus group where no one came, and another focus group where one female participant was interviewed, the researcher made arrangements to interview three male participants. Two interviews were conducted by phone and one was conducted in person. Five female and three male Hispanic undergraduate students participated in either a focus group or interview during Phase One of this study. Mean age was 20 years, with

participant ages ranging 18-21 years. Six participants identified as Mexican, Mexican-American, or Chicano, one participant identified as South American, and one participant identified as Spaniard. Seven participants were full-time students. Campus affiliation of five participants was the university's Tempe campus and three participants attended classes at the university's Downtown Phoenix campus. Two participants reported living in campus residence halls. Of the six participants who lived off campus, three lived with friends or roommates, one lived with parents, and two lived with other family members. Three participants reported being in a committed dating relationship or engaged, the five remaining participants identified as single and not in a relationship. One participant identified as gay, while all other participants identified as heterosexual.

The focus group and interviews were guided by the National Association of Student Personnel Administrators (NASPA) social ecological model described in the document *Leadership for a Healthy Campus: an Ecological Approach for Student Success* (NASPA, 2004). The social ecological model is an integrated framework for prevention that is useful for developing multidimensional plans aimed at system-level change (Best et al., 2003). The NASPA model is designed to assist colleges and universities in identifying barriers to health that may arise from five dimensions of the campus ecology: characteristics of the individual, the place, the people, the organization, and the surrounding community (2004). The model is intended to encourage planners to think beyond the individual's role in health behavior and to examine the role and interplay of environmental influences on student health (NASPA, 2004). Although there are several versions

of the social ecological model used in public health (Centers for Disease Control and Prevention, 2009; Sallis, Owen, & Fisher, 2008; Stokols, 1996; World Health Organization, 2009), the NASPA model was selected for use in this research project because it was specifically designed for use by colleges and universities (NASPA, 2004).

The focus group session and interviews included a brief definition of stress and stressors. A series of questions solicited stressors and stressful experiences influenced through the five NASPA social ecological dimensions. Additional questions sought common words used by Hispanic students to express and describe stress, situations and experiences that cause stress, tactics that students use to relieve or reduce stress, most bothersome stressors and those that affect academic performance and persistence (Appendix B). Exact question order and wording varied depending on participant responses; however, the core content remained the same. The discussion was recorded via digital audio recording. The researcher also took detailed notes during phone interviews to back up the recording system. Demographics of the participants were collected through a short questionnaire (Appendix C). All focus group and interview participants were given two movie tickets to Harkins movie theaters as a “thank you” for their contribution to the study.

Focus group and interview participants were invited to assist with Phase Two of the study by assisting with survey development and taking the pilot survey. Students were awarded with their choice of two Harkins movie tickets or a \$20 Starbucks card for their participation in each additional phase of the study.

The aim of conducting the focus group and interviews was to develop a set of questions that integrates perspectives from the culture under study into the design of the instrument (Parrado, McQuiston, & Flippen, 2005). The data from Phase One of this study was examined to identify themes according to the coding and analysis methods for grounded theory described by Auerbach and Silverstein (2003). Predominant themes were identified and used to develop survey questions. Additional questions dealing with student stress were included, with permission, from the American College Health Association — National College Health Assessment II (ACHA-NCHA II) (American College Health Association, 2008). In addition, supplemental questions used in conjunction with the ACHA-NCHA II at Arizona State University to examine trends regarding student stress and academic performance measures were incorporated into the survey instrument (Moses, Pabedinskas, & Eli, 2010). From this combination of sources the instrument was developed and piloted. Student participants of the focus group and interviews from Phase One of the study were invited to review and provide input to the survey and to take the survey as pilot participants.

At the beginning of the focus group, participants were asked to make an informal verbal agreement not to reveal identifying information about any of the participants and to keep full confidentiality about all that was said in the discussion. Written records of the discussion excluded names and identifying information of the participants. The original recordings were deleted from the recorder following transcription, and the digital files are being kept on a password-protected computer, accessible only to the researcher. The signed

consent forms were scanned and transferred to a password protected computer file accessible only to the researcher.

Phase Two—Survey Administration and Analysis

An online web survey format was used to administer the survey.

Advantages to using a web survey format include time and cost savings for data collection and analysis (Dillman, Smythe, & Christian, 2008), a rapid and cost efficient response rate (Mitra, Jain-Shukla, Robbins, Champion, & Durant, 2008), and convenience and familiarity with internet communications for the college student participant (Carini, Hayek, Kuh, Kennedy, & Ouimet, 2003). Evans and Mathur (2005) note that internet users are not representative of the general population, which is discussed as a weakness of web surveys. Underrepresented or disadvantaged groups may not have access to or experience with web surveys, for example. However, college students tend to have access to the internet through their institutions and are young people who have grown up in the computer age. A meta-analysis comparing web and mail surveys found the response rate of college students was three percentage points higher for web surveys than for mail surveys (Shih & Fan, 2008). A recent study comparing web and mailed surveys among community college undergraduate students found that Mexican and Mexican-American students had the lowest rate of response to the paper survey (10.9%) and the highest response to the online survey (35.1%) (Sax, Gilmartin, Lee, & Hagedorn, 2008).

Another weakness of online surveys is a low response rate, with reported response rates ranging from 17.5% to 25% (Deutskens, de Ruyter, Wetzels & Oosterveld, 2004, p. 33). Historically, online surveys administered by ASU

Wellness to a random sample of students from Arizona State University have received approximately a 10% response rate, with incentives suggested by a student audience (lottery for \$100 or \$200 added to the ASU Sun Card with a probability rate of 1 in 100 respondents receiving the award). Between 10% and 14% of ASU Wellness survey respondents identify as Hispanic. The survey was sent to a random sample of 2,000 currently enrolled ASU undergraduate students who identified as Hispanic in the Arizona State University student database, with the aim of having a minimum of 200 Hispanic students complete the survey. Students were randomly selected through a logarithmic randomization formula to participate in the study.

Students were recruited to take the survey via an email invitation sent on February 4th, 2012. One week after the initial recruitment message was sent, a reminder email message was sent to the entire sample. A second reminder was sent at two weeks. A final reminder to complete the survey was sent at two-and-a-half weeks, with a survey closing date set for three days from the notice, on February 26th, 2012. Data was collected using a Survey Monkey web-survey prepared by the researcher. The survey included open-ended, yes/no, scale and multiple choice questions. Questions were included to determine common stressors, their impact on academic measures, stress-relieving activities, and demographic variables (Appendix C).

During the first two weeks of survey administration, participants were informed that if they completed the web-survey they would have the option to sign up for a random prize drawing for one of ten awards of \$50 in Sun Dollars applied to the recipients' ASU Sun Card. After observing a lower than desired

completion rate, the award was increased to ten awards of \$150 in Sun Dollars applied to the recipients' ASU Sun Card. This increased participation, but resulted in only a small increase in the rate of completions. The prize drawing was optional and separate from the survey. To access the prize drawing, a hyperlink was provided to each participant upon completion of the survey. The participants' responses were not linked to their student identification numbers or to their names. Each participant was assigned an identifier (ten digit number) by the web-survey program, which was not linked to the participant's actual identifying information. The information for the prize drawing (name and email address) was collected in a separate webpage, such that the participants' responses were not able to be linked to their survey responses or identifying information.

Data was analyzed using SPSS 20 for Windows (SPSS, 2011). Descriptive statistics were used to examine frequencies. Stressors were placed into themes and tested for reliability of fit within the theme using Cronbach's Alpha. Items were removed from a theme if needed, to keep Cronbach's Alpha at .700 or greater. Items that were not relevant to any theme were analyzed separately. This process was also used to test the reliability of fit for themes related to stress reduction and relief. Pearson's Chi-Square and Cramer's V were used to measure association between nonparametric variables. Significance was set at α .05 for all statistical tests.

Phase Three—Dissemination of Findings and Recommendations

The World Health Organization (1948) defines health as a state of complete physical, mental and social well-being and not merely the absence of

disease or infirmity. Health promotion includes activities such as developing public policy that supports health, changing organizational practices, creating health-supporting environments, fostering coalitions and networks, building community capacity for action, developing health promoting skills in individuals, and re-orienting health services to incorporate prevention and promotion (World Health Organization, 2009; Cohen & Swift, 1999). Health promotion goes beyond education and engaging individuals in attaining and maintaining a healthy lifestyle. It also engages systems and processes outside the individual to create and support health. Therefore, health is the responsibility of those both inside and outside of the health professions. Collaboration across professions and communities is necessary for health promotion efforts to be successful (World Health Organization, 2009). Within institutions of higher education, departments and disciplines that are tasked with promoting student health must work with other departments in order to achieve positive outcomes.

The purpose of the activities within Phase Three of this study was to engage key stakeholders in responding to the findings and recommendations that emerged from the data. This component of the study was the “action” component, aimed to move key stakeholders to implement actions based on the findings and recommendations as a way to improve outcomes among undergraduate Hispanic students at Arizona State University. Forty-one key stakeholders were invited to participate in a review and discussion of the findings, including student services directors, faculty, deans and administrators. Invitations were made based upon the ability of invitees’ roles and positions to influence program and policy, and their interest and commitment in providing

support to Hispanic students. Invitation to participate was made through personal email invitations from the researcher. Sixteen key stakeholders participated in the presentation and discussion of the study findings. Participants included thirteen student services department directors representing the university's four campuses, two Associate Vice Presidents from the student services Vice President's office, and two members of the faculty, including a member of the Faculty Senate.

Presentation and discussion of the study findings was guided by the National Association of Student Personnel Administrators (NASPA) social ecological model described in the document *Leadership for a Healthy Campus: an Ecological Approach for Student Success* (NASPA, 2004). The NASPA model was used to discuss the shared responsibility for health that is necessary to improve student learning outcomes (NASPA, 2004). Survey results were categorized and presented according to findings relevant to NASPA ecological dimensions, including characteristics of the individual, the place, the people, the organization and the surrounding community. Time was allowed for questions and discussion of potential actions that could be taken to reduce or minimize stress within the context of each ecological dimension. Phase Three participants were asked to consider how they might apply the findings and recommendations of the study within the scope of their positions and departments in an effort to improve academic outcomes among Hispanic undergraduate students. Participant responses were recorded through note-taking and incorporated into the recommendations made as a result of this study.

In the email invitation potential participants were notified that the session was a part of a research study. At the beginning of the session, participants were reminded that the session was Phase Three of a study, and that their comments would be reported as a part of the study results, although identifying information about participants would be kept confidential. Written records of the discussion excluded participant names and identifying information; however, a record of positions represented was included in the study findings to highlight potential actions resulting from the study. Following the presentation and discussion, the researcher sent an executive summary of the findings and recommendations to all participants and other key stakeholders in a position to act on the recommendations.

CHAPTER 4

RESULTS

The purpose of this study was to identify stressors that have a negative impact on self-reported academic performance among Hispanic undergraduate students at Arizona State University. The study was implemented in three phases. In Phase One, focus groups and interviews were used to inform the survey development process. In Phase Two, an online survey was administered and findings were analyzed. In Phase Three, survey findings and resulting recommendations were presented to key stakeholders in order to identify actions they could initiate through their positions in order to reduce stress and improve outcomes among Hispanic undergraduates at Arizona State University. Results for each phase of the study follow.

Phase One—Themes

A series of questions was used during focus groups and interviews to elicit discussion about common stressors, stressors that have a negative impact on academic performance, and strategies used to reduce and relieve stress. Questions were designed to encourage participants to consider the social-ecological influences on stress, based on the NASPA ecological model (NASPA, 2004). Themes were identified according to coding and analysis methods for grounded theory (Auerbach & Silverstein, 2003).

Themes. The most predominant stressors identified in the focus groups and interviews included financial, family, academics and problems with technology. Additional themes included the campus environment, commuting, crime, relationships, health, personal concerns, and societal issues. Themes that

emerged for stress reduction and relief included physical activities, sedentary activities, relaxation, getting away, involvement, spending time with friends and family, problem solving, talking, and staying positive. Participants agreed that too much stress can lead to negative outcomes in many areas of life. The areas of life negatively affected by stress were identified in the following themes: academic performance, ability to concentrate, social life, sleep, relationships, mental health, physical health, family responsibilities, and performance at work.

Ecological dimensions related to themes. Each stressor identified within a theme was evaluated in accordance with the NASPA ecological model to determine its relevance to characteristics of the individual, the people, the place, the organization, and/or the surrounding community (NASPA, 2004). Several themes contributed to multiple dimensions. This step was taken to ensure that each NASPA ecological dimension would be represented in the resulting survey.

Stressors related to the individual included financial issues; physical, mental and behavioral health issues; time management and organizational issues; legal problems; internalized pressure to succeed for their families, their communities, and their people. Participants indicated that financial issues had far-reaching effects. For example, a lack of money can result in debt through student loans, which was one common stressor identified. A lack of money can also result in the need to work in order to earn an income, which was another common stressor identified. Working at a job reduces time for school work and family, which were also identified as stressors. Similarly, participants noted that stress affects sleep, which affects one's ability to concentrate and stay awake in class, which increases stress. Participants spoke of being over-committed, with

limited time to devote to their many responsibilities. Threads that ran throughout the discussion of individual stressors were internalized pressure to succeed and fear of failure. One participant shared, "I wake up in the middle of the night worried that I missed something." This participant, who had developed panic attacks, said that his biggest stressor was fear that he had forgotten to do something important.

Predominant themes for stressors related to people included family responsibilities, family problems and concerns; relationship difficulties with intimate partners, friends, and/or roommates; meeting new people, concern about fitting in and having different values than their peers. Participants described family responsibilities such as taking care of younger siblings on the weekends, caring for chronically ill parents, doing chores for the family at home, and helping out with family finances. Family problems that were cited included financial problems, legal problems, health problems, and family conflicts. One participant shared that, "Family is the root stressor for me." Participants discussed dealing with conflicts in a wide range of relationships, from family, to friends, to co-workers, to roommates. They spoke of the stress of meeting new people and developing romantic relationships. They discussed their struggles to balance their time between academic responsibilities and their friends and family.

Predominant themes for stressors related to the place reflected the context unique to each campus, the urban city environment, and the weather. Participants discussed the time and frustration associated with commuting, transportation and parking. Those who lived on campus and attended classes at the Tempe campus cited crowded conditions and competing for sidewalk space

with bikes and skate boards as stressors. Participants from the Downtown Phoenix campus said a lack of space for quiet reflection and lack of places to hang out between classes contributed to stress. All agreed that traversing long distances between classes and having to carry a heavy load of books and supplies was stressful, especially during the hot months in Arizona. Participants described living in campus residences as sometimes loud and chaotic. Participants who had come to Phoenix from small towns said they struggled with crowds and felt closed in by tall buildings and the lack of green spaces.

Predominant themes for stressors related to the organization (Arizona State University) included academic responsibilities and processes; issues with instructors and grading practices; and problems with technology. Although participants recognized that homework, assignments, exams and group projects are an expected part of their academic experience, they reported that these responsibilities frequently become overwhelming. In addition, they described problems with scheduling the classes they need, challenges with academic advising, understanding financial aid and scholarship applications, not getting financial aid on time, and lack of assistance navigating academic processes to be stressful. Participants cited stress due to instructors who are not proficient in speaking English. One participant had to withdraw from physics because she couldn't understand the teacher and was struggling in the class. Lack of standard grading practices was a major source of stress among participants who were striving to maintain a high grade point average, especially when they took courses from instructors who did not give "A's" as a matter of practice, or who gave lower grades than other instructors did for the same quality of work.

Other major stressors within the organizational dimension were problems with technology. Participants reported online tests and assignments not loading correctly, Blackboard going down, and waiting for a response about technical questions from an instructor or technical support office as common stressors. Because so much communication, coursework, and testing is done online, participants reported that not having adequate or consistent access to the internet uniformly across campus and in their residence halls was another source of stress. One participant compared organization-based stressors with family stressors like this, "Family stuff is, you know, family. So you gotta worry about that... But then there's the things that could be so easily avoided that are caused by other people who are not thinking about..what they are causing to you."

Predominant themes for stressors related to the surrounding community included attitudes about undocumented persons in the United States, Arizona immigration laws, discrimination, the current economic crisis, and crime. Participants discussed the impact Arizona immigration laws are having on their families and communities. Worry about undocumented friends and family was a common stressor. Further, participants reported that community pressures were stressful. "Community members expect you to fail if you are Hispanic." This expectation was perceived to be common, resulting in internalized pressure to overcome negative stereotypes by succeeding in school and proving this stereotype to be wrong. Financial stressors were evident within all the ecological dimensions addressed. However, the current recession and weak job market seemed to increase participant worry about whether their selected major would produce a good job after they graduate, about being able to pay back student

loans, and about whether the time and money spent on getting a degree would be worth it. Being a victim of crime or worry about becoming a victim, was also described by the participants as stressful. One participant described her experience with having her bike seat stolen, replaced and then stolen again. This was stressful to deal with and resulted in unexpected expenses to replace the seat twice, adding to her financial stress.

When asked which stressors had a negative influence on academic performance, participants observed that the cumulative effect of multiple stressors had the greatest negative impact on school. One participant described this phenomenon as stress having a domino effect. "Stress affects sleep, and then that affects your ability to concentrate and stay awake in class." This influences academic performance, which affects stress levels.

Phase Two—Survey Results

Description of the sample. Of the random sample of 2,000 undergraduate Hispanic students enrolled at Arizona State University in spring 2012 who were invited to participate, 314 started the survey. However, 145 quit taking the survey in the first section, which addressed common stressors and their academic impact, a topic central to the survey purpose. Non-completers were excluded from the analysis, leaving a sample size of 169 participants.

Gender, age, relationship status, and sexual orientation. Females made up 73.6% of respondents ($n = 120$). The mean age of respondents was 22.5 years ($SD = 6.27$) with a range of 18-54, a median of 21.00, and a mode of 20 years. Students between the ages of 18-24 made up 85.2% ($n = 138$) of the respondents, with 4.1% ($n = 7$) of the respondents ages 41 and older. The

relationship status of respondents ranged across a continuum from being single, not in a relationship ($n = 68, 41.7\%$), being in an uncommitted or uncertain dating relationship ($n = 16, 9.8\%$), being engaged or in a committed dating relationship ($n = 53, 32.5\%$), to being married or in a domestic partnership ($n = 23, 14.1\%$). Heterosexual orientation was most prevalent ($n = 150, 94.3\%$). One lesbian, two gay, five bisexual and one questioning student responded to the survey ($n = 9, 5.7\%$).

Hispanic ancestry and ethnic origin. Respondents who identified as Mexican, Mexican-American, or Chicano(a) were the largest represented ancestry/ethnic origin group ($n = 135, 79.9\%$), with the second largest being European Spanish ($n = 25, 14.8\%$). The remaining groups were combined into an "other" ancestry/ethnic origin group ($n = 28, 16.6\%$) including respondents whose ancestry was Puerto Rican, Cuban, Dominican, Central and South American. Twenty-one respondents were born outside of the United States ($n = 21, 12.4\%$), although only seven (4.3%) identified as international students.

Living arrangements. The majority of respondents resided off campus in a variety of living situations ($n = 127, 77.9\%$). The most common off-campus living arrangements included living with parents or guardians ($n = 46, 28.2\%$), with other family members ($n = 43, 26.4\%$), and with friends and/or roommates ($n = 30, 18.4\%$). Other family members included siblings, cousins, grandparents, children, spouses and domestic partners. Fifteen "other" living arrangements that were specified by respondents qualified as living with other family members and were combined with that category. Several respondents lived alone in an off-campus residence ($n = 8, 4.9\%$). Among those

respondents who lived on campus in university housing, the majority lived in residence halls ($n = 34$, 20.9%). One respondent lived in fraternity/sorority housing and another respondent reported living in other university housing.

Educational characteristics. A question regarding the post high school education of respondents' parents or step-parents revealed that 39.6% ($n = 67$) of respondents qualified as first generation college students, those whose parents have not attended or graduated from a two- or four- year college or technical school. Definitions for first generation college students range from those whose parents have no college experience (Billson & Terry, 1982) and those whose parents have some college experience, but have not received a bachelor's degree (Choy, 2001). This study included step-parents in the definition to account for students whose families include these parental roles.

Additional educational characteristics of the survey respondents are shown in Table 1. These include academic level, campus affiliation, self-reported cumulative grade-point-average, academic disruptions experienced, and number of credits taken in the current and previous semesters. This information was collected in order to explore the association between selected educational characteristics and stressors.

Student involvement. Respondents were asked about their membership and leadership in student organizations during the previous 12 months. Forty-six (27.2%) reported being a member of one or two student organizations in a non-leadership role, while 20 (11.8%) reported serving in a leadership capacity in one or two student organizations. A small number of respondents were involved in sports clubs or intramurals ($n = 9$, 5.3%), a

religious group ($n = 7$, 4.1%), the Residence Hall Association ($n = 5$, 3.0%), and several other organizations. A total of 76 respondents (45.0%) indicated they were involved in at least one student organization, while 93 (55.0%) respondents indicated they were not involved in any student organizations.

Table 1

Educational Characteristics

Characteristics	<i>n</i>	%	
Academic Level			
1 st Year Undergraduate	40	24.5	
2 nd Year Undergraduate	33	20.2	
3 rd Year Undergraduate	49	30.1	
4 th Year Undergraduate	26	16.0	
5 th Year or More Undergraduate	15	9.2	
Campus Affiliation¹			
Downtown Campus	26	16.0	
Polytechnic Campus	8	4.9	
Tempe Campus	85	52.5	
West Campus	5	3.1	
Online Only	7	4.3	
Multiple Campuses	31	19.1	
Cumulative Grade-Point Average²			
3.5-or higher	57	35.0	
3.0-3.4	56	34.4	
2.5-2.9	36	22.1	
2.0-2.4	8	4.9	
1.9 or lower	6	3.7	
	<i>Mean</i>	<i>SD</i>	Range
Academic Credits			
Current Semester	14.91	3.40	0-24
Previous Semester	13.24	3.94	0-21

¹ Respondents could select multiple responses.

² Grade-point average was self-reported.

Academic and student services. A variety of academic and student services are provided through the university to help students achieve optimal academic performance. Over 95% of respondents had accessed at least one student service and 49.1% had taken some type of academic support class. Formal services such as these serve as a mechanism for student support and can serve an important role in mitigating student stress. Table 2 shows the variety of academic and student services respondents had utilized during the 12 months prior to taking the survey.

Table 2

*Academic and Student Services Used*¹

<u>Service and Program Name</u>	<u><i>n</i></u>	<u>%</u>
Academic Advising	36	22.1
Academic Support Classes	83	49.1
Career Services	35	20.7
Counseling Services	19	11.2
Disabled Student Services	5	3.0
Fitness Centers	70	41.4
Health Services	25	14.8
Multicultural Student Services	7	4.1
Online Money Management Programs	11	6.5
Student Support Services ²	56	33.1
Wellness Services ³	49	29.0
No Student Services Used	8	4.7
No Academic Support Programs	68	40.2

¹ Respondents could select multiple responses.

² Student support services include tutoring and learning support services.

³ Wellness services include counseling, health and disabled student services, which are also presented separately in this table.

Time and responsibilities. In order to assess how student use of time may influence stress and academic performance, respondents were asked to estimate how many hours per week during the academic semester they had

worked at a job, volunteered or interned, done school work, or provided care for dependents or other family members during the past twelve months. Over 40% ($n = 68$) of respondents worked 20 hours or more per week. Over half ($n = 85$, 52.1%) of respondents engaged in a weekly volunteer commitment or internship. Nearly half ($n = 78$, 47.4%) of respondents studied or did homework at least 20 hours per week. In addition to these time commitments, half ($n = 80$, 49.0%) of the respondents had some level of responsibility for caring for dependents and other family members. Table 3 shows the amount of time respondents spent in these activities.

Table 3

Time Spent Attending to Responsibilities

Activity	0 hrs per week n (%)	1-19 hrs per week n (%)	20-40hrs per week n (%)	40 or more hrs per week n (%)
Worked at a job	49 (30.1)	46 (28.3)	48 (29.4)	20 (12.3)
Volunteer job or internship	78 (47.9)	75 (46.1)	6 (3.7)	4 (2.4)
School work	0 (0)	85 (52.1)	59 (36.2)	19 (11.2)
Family care	83(50.9)	54 (33.2)	13 (7.9)	13 (7.9)

Note: There were six non-respondents to this question, leaving a sample size of 163 for these items.

Funding education. To assess how the cost of education may influence stress and academic performance, respondents were asked what percentage of school expenses, not including room and board, were being paid by themselves and their parents, and through student loans and scholarships. While 70.4% ($n = 119$) of respondents had received scholarships, all relied on

some form of personal or family support, or student loans, to fund education. Nearly three-fourths ($n = 117$, 69.2%) of respondents were paying at least 25% of the costs associated with their education. Families contributed at least 25% of the school expenses of 18.5% ($n = 31$) of respondents. Most respondents ($n = 101$, 59.8%) had taken out student loans to fund their education. The cost of higher education places a financial burden on students and their families. This burden is a primary contributor to Hispanic undergraduate student stress. Table 4 shows funding sources for school expenses.

Table 4

Percentage of School Expenses Paid by Various Sources

Funding Source	None n (%)	1-25% of Costs n (%)	26-50% of Costs n (%)	51-75% of Costs n (%)	76-100% of Costs n (%)
Family	79 (46.7)	53 (31.3)	10 (5.9)	10 (5.9)	11 (6.5)
Scholarships	44 (26.0)	26 (15.4)	19 (11.2)	27 (16.0)	47 (27.8)
Student	46 (27.2)	63 (37.3)	12 (7.1)	13 (7.7)	29 (17.2)
Student Loans	62 (36.7)	32 (18.9)	27 (16.0)	23 (13.6)	19 (11.2)

Note: Does not include room and board.

Other demographic variables. Only a few respondents identified themselves as disabled ($n = 7$, 4.3%). Of these respondents, three indicated they received assistance from the Disability Resource Centers at Arizona State University, and four indicated they did not utilize this campus resource. Regarding service in the United States armed forces, two respondents indicated they were currently serving, and one identified as a veteran.

Stress management. Respondents were asked to what extent they had done a good job managing stress within the last twelve months. Response

options were presented on a scale from one to five. A response of one indicated that the respondent did not experience stress. Responses of two, three, four, and five indicated the respondent did a poor, fair, good, or outstanding job managing stress, respectively. The mean stress management score was 3.20 ($SD = .76$). The majority of respondents indicated doing a fair ($n = 84, 49.7\%$) or good ($n = 52, 30.8\%$) job managing stress. Five respondents indicated they were doing an outstanding job managing stress ($n = 5, 3.0\%$). Of the remaining respondents 27 (16.0%) indicated they were doing a poor job managing stress and one respondent reported not experiencing stress.

Negative effect of stress on life. Respondents were asked to rate the negative effect of stress on their academic performance, social life, physical health, mental health, performance at work, ability to sleep, ability to concentrate, ability to fulfill family responsibilities and their relationships as experienced over the past 12 months. The rating scale used was a 7-point scale with response options including: did not experience/not applicable, never, rarely (1-4 times), seldom (5-11 times), sometimes (monthly or more often), often (weekly or more often), almost always (almost daily or more often). Higher scores indicated a greater impact. Often and almost always responses were combined into one "often" value defined as happening weekly or more often. Each area of life that is negatively affected by stress can increase stress and take a toll on other areas of life. Academic performance appears to have taken the greatest toll, with more than one-third ($n = 61, 36.1\%$) of respondents reporting that stress often had a negative influence on academic performance. Ability to concentrate and ability to sleep, factors that influence academic performance,

were affected by stress, with 53 (31.4%) and 52 (30.8%) of respondents reporting stress often affected these areas of life. Table 5 shows the negative impact of stress of these areas life in descending order by mean as well as the percentage of respondents who often experienced a negative impact from stress in these areas of their lives.

Table 5

Negative Influence of Stress on Areas of Life

Areas Affected by Stress	<i>M</i>	<i>SD</i>	Often	
			<i>n</i>	%
Academic Performance	4.85	1.21	61	36.1
Ability to Concentrate	4.76	1.36	53	31.4
Ability to Sleep	4.61	1.58	52	30.8
Social Life	4.54	1.37	41	24.2
Relationships	4.25	1.57	41	24.2
Family Responsibilities	4.07	1.59	36	21.3
Mental Health (had panic attacks, became depressed, etc.)	3.97	1.64	30	17.7
Physical Health (got sick more often)	3.83	1.49	26	15.3
Performance at Work	3.43	1.64	16	9.5

Note: Stress impact was rated on a 7-point scale, with 7 being the greatest impact. Often is defined as weekly or more often.

Stressors and academic performance results. A series of questions asked respondents to rate stressors according to the effect each stressor had on the respondent's stress level (*stress effect*). The responses were ordered on a 6-point scale with response options including: did not experience this/not applicable; I experienced this, but it did not increase my stress; low effect on my stress level; moderate effect on my stress level; high effect on my stress level; and very high effect on my stress level. Higher scores indicated a greater stress

effect. High and very high effect on stress levels were combined into a single category for analysis. Questions about stressors were grouped into common themes. Immediately after rating the stress effect of the stressors within a particular theme, respondents were asked to assess the highest level of impact each stressor had on their academic performance (*performance effect*). Performance effect was rated on a 6-point scale with options including: did not experience this/not applicable; I experienced this, but my academics were not negatively affected; I missed a class or fell behind in my studies; I received a lower grade on an exam or important project; I received a lower grade in a course; and I received an incomplete or dropped a course. Higher scores indicted a more serious performance effect. The two highest rated performance effects were combined into one "serious performance effect" category. The next two highest response categories were combined into a "moderate performance effects" category. These changes were made to facilitate presentation, analysis and discussion of academic performance outcomes related to student stress.

As mentioned, stressors were categorized by theme on the survey. For the purpose of data analysis these themes were more narrowly defined. Themes were tested for reliability using Cronbach's Alpha to ensure that stressors fit in their assigned themes for stress and performance effects. Themes, question numbers included in each theme, and Cronbach's Alpha for stress effect and performance effect are presented in Table 6. Stress effect (M, SD) and performance effect (M, SD) are shown in Table 7, and the percentage of respondents who experienced moderate and serious performance effects are

shown in Table 8. These tables present themes in descending order as measured by the mean for stress effect shown in Table 7.

Table 6

Cronbach's Alpha for Stressor Themes

Stressor Theme	Question Numbers Included	Cronbach's α	
		Stress	Performance
Family	9 & 10 c,d,e 13 & 14 m,n; 15 & 16 e,g	0.833	0.798
Time	13 & 14 c,h,i	0.840	0.857
Mental health	19 & 20 a-g	0.804	0.840
Academics	11 & 12 a-i	0.857	0.800
Finances	21 & 22 a-d	0.868	0.908
Tech problems	13 & 14 a,b,d,e,j,k	0.815	0.852
Physical health	3 & 4 a-d	0.798	0.801
Commute	19 & 20 h-m	0.733	0.771
Instructors	13 & 14 l; 15 & 16 a-d	0.823	0.861
Personal concerns	21 & 22 e,f,g	0.754	0.788
Media leisure time	7 & 8 a-i	0.785	0.825
Place	17 & 18 a-h	0.816	0.820
Relationships	9 & 10 g; 23 & 24c,d,e	0.879	0.866
Societal	9 & 10 f; 23 & 24a,b,f	0.808	0.713
Discrimination	5 & 6a-g	0.859	0.797
Crime	13 & 14 g	0.780	0.811
Legal Problems	13 & 14 f		
Alcohol or Drugs			

Note: Stressor themes are listed in descending order of highest stress effect, as measured by the mean for stress effect shown in Table 7.

Table 7

Stress and Performance Effect of Stressor Themes

Stressor Theme	Stress Effect		Performance Effect	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Family	3.88	1.36	2.74	1.12
Time	3.55	1.33	2.48	1.01
Finances	3.51	1.21	2.18	0.86
Academics	3.27	1.11	2.21	0.73
Mental health	2.94	1.41	2.32	1.14
Tech problems	2.72	1.28	2.16	0.95
Commute	2.67	1.20	1.90	0.88
Personal concerns	2.62	1.05	1.84	0.65
Physical health	2.50	1.03	1.97	0.70
Societal	2.37	1.14	1.62	0.52
Instructors	2.32	1.10	1.87	0.86
Relationships	2.19	1.01	1.67	0.60
Discrimination	2.18	1.26	1.60	0.58
Place	2.16	0.72	1.72	0.49
Media leisure time	2.04	1.03	1.83	0.81
Crime	1.63	0.71	1.29	0.36
Legal problems	1.39	1.14	1.34	0.89
Alcohol or drugs	1.11	0.42	1.15	0.44
Overall Stress			3.65	1.43

Note: Themes are listed in descending order of highest stress effect, as measured by the mean stress effect.

Table 8

Moderate and Serious Performance Effects of Stressor Themes

Stressor Theme	Moderate Performance Effects		Serious Performance Effects	
	<i>n</i>	%	<i>n</i>	%
Family	55	32.5	11	6.5
Time	39	23.1	8	4.7
Finances	16	9.5	5	3
Academics	21	12.4	2	1.2
Mental health	40	23.7	8	4.7
Tech problems	25	14.8	5	3
Commute	15	8.9	3	1.8
Personal concerns	8	4.7	2	1.2
Physical health	12	7.1	2	1.2
Societal	6	3.6	1	0.6
Instructors	18	10.7	1	0.6
Relationships	2	1.2	1	0.6
Discrimination	5	3	0	0
Place	3	1.8	0	0
Media leisure time	12	7.1	3	1.8
Crime	0	0	0	0
Legal problems	8	4.7	5	3
Alcohol or drugs	5	3	0	0
Overall Stress	74	44.3	55	33

Note: Themes are listed in descending order of highest stress effect, as measured by the mean stress effect in Table 7.

The most frequently endorsed stressors produced the most serious performance effects. Family stressors produced a serious performance effect among 11 (6.5%) of respondents and a moderate performance effect among 55 (32.5%) of respondents. Time-related and financial stressors had moderate

performance effects of 39 (23.1%) and 16 (9.5%), and serious performance effects of 8 (4.7%) and 5 (3.0%) among respondents, respectively. Academic stressors resulted in moderate performance effects of 21 (12.4%) of respondents and serious performance effects among 2 (1.2%) respondents. Stressors with moderate or low impact also have a considerable effect, as many of these stressors influence stress levels attributed to more predominant stressor themes and contributed to the overall stress levels of the participants. Regarding legal programs, only a few respondents experienced this stressor leading to a small mean score for this stressor. However, legal problems resulted in serious performance effects for 5 (3.0%) of respondents, indicating that legal problems had a very serious academic impact.

Overall impact of stress on academic performance. One measure of the overall impact of stress on academic performance was to ask respondents to rate the performance effect of their overall stress level for the past 12 months. As a result of all the various stressors they experienced 22 (13.0%) respondents reported they had received an incomplete or dropped a course, 33 (19.5%) received at lower grade in a course, 22 (13.0%) received a lower grade on an exam or an important project, and 52 (30.8%) missed a class or fell behind in their studies. Nearly one in five respondents indicated that the overall level of stress did not have a negative effect on their academic performance (31, 18.3%).

Another method used to measure of the overall performance effect of stress was to visually examine the data and count the number of respondents who selected a serious performance effect score at least once. Of 169 subjects,

41 (24.3%) indicated they had received an incomplete or dropped a course at least once in the past 12 months. Of these, 27 (16.0%) had also received a lower grade in a course due to stress. An additional 44 (26.0%) subjects also received a lower grade in a course due to stress. Thus, 85 (50.3%) subjects had experienced at least one serious performance effect from stress in the last year. Many of the subjects who endorsed these performance effects did so multiple times within the survey.

Table 9 presents a similar picture. The magnitude of academic disruptions was such that two-thirds of respondents (67.5%) had experienced more than one academic disruption. The remaining one-third had not experienced any disruptions. This data indicates shows that when academic disruptions occur, they occur together. Respondents facing these challenges were dealing with several significant academic problems at the same time.

Table 9

Academic Disruptions

<u>Academic Disruption</u>	<u><i>n</i></u>	<u>%</u>
Withdrew from class after drop add ended	50	29.6
Received a "C" grade in a class	70	41.4
Received a "D" or lower grade in a class	33	19.5
Retook a course to get a better grade	27	16.0
Withdrew from school	4	2.4
Decided not to return to school the next semester	4	2.4
Combination of these disruptions	114	67.5
No academic disruptions	55	32.5

Relationship of stress management, stress impacts and themes to demographic characteristics. Frequency statistics showed that stress management, stress impacts, themes, and stress relief data did not have normal distributions. With the exception of the stress management question, this observation was expected due to the nonparametric nature of the questions and response options used in the survey. For example, it was expected that nearly all respondents would indicate they experienced academic responsibilities, which would produce a skewed distribution for stress effect and performance effect within the academic themes. This type of phenomenon was evident for each theme, with the magnitude of the effect depending on the commonality of the experience. The stress management data was predicted to show a normal distribution due to the scale-like measure used, but did not. Therefore, for measures of association Pearson's Chi-Square and Cramer's V were used. Significance was set at $\geq .05$ for all statistical tests.

Due to the small size of the survey sample, it was necessary to recode responses to reduce the number of cells with counts lower than 5, which can result in a type II statistical error. For the question about how well the respondent managed stress, "good" and "outstanding" were combined to make a "good" category. For stress effect themes, responses to "high" and "very high" were combined to create a "high stress effect" category. For performance effect themes, "missed a class or fell behind in my studies" was combined with "received a lower grade on an exam or an important project" to make a "moderate performance effect" category. "Received a lower grade in a course" and "received an incomplete or dropped a course" were combined to make a

“serious performance effect” category. For questions about how often an activity or effect occurred, responses “did not experience/not applicable” and “never” were combined to make a “never” category; “rarely” and “seldom” were combined to make a “seldom” category; “sometimes” remained unchanged; and “often” and “almost always” were combined to make an “often” category. These changes resulted in fewer low cell counts in the analysis.

Within demographic variables there were also questions with multiple response options leading to low cell counts in the chi-square analysis. When necessary, responses were combined to reduce low cell counts and improve reliability of the findings. An explanation of data recoding is made in conjunction with specific findings. Demographic variables with too small a count were not examined for association. These variables included sexual orientation, international, disabled, and veteran status, all of which included groups with counts smaller than eight. Following the recommendation of Yates, Moore, and McCabe (1999, p.734), only analyses containing fewer than 20% of cells with an expected count of less than five and all expected counts equaling one or more were included in this report.

Dependent variables were assessed in the context of the “last 12 months.” This applied to the associations between demographic variables (independent) and the stress and performance variables examined.

Gender. Gender was found to be associated with the stress effect of time as well as the impact of stress on relationships and physical health. Twenty-nine (24.2%) female respondents reported a high stress effect from time influences compared to 4 (9.3%) of male respondents, $\chi^2(4, n=163) = 10.823$,

$p = .029$, Cramer's $V = .029$. In addition, 31 (25.8%) female respondents reported a moderate stress effect from time influences compared to 15 (34.9%) male respondents.

A greater proportion of female respondents reported experiencing negative effects from stress in their relationships and in their physical health than did male respondents, $\chi^2(3, n=163) = 8.902$, $p = .031$, Cramer's $V = .031$, $\chi^2(3, n=163) = 8.333$, $p = .040$, Cramer's $V = .040$, respectively. Stress often had a negative impact on the relationships of 32 (26.7%) female respondents and 9 (20.9%) of male respondents during the past 12 months. Another 33 (27.5%) of female respondents reported that stress sometimes negatively affected their relationships, compared to 6 (14.0%) of male respondents.

Another difference between male and female respondents was the negative effect that stress had on their physical health. As with other gender related stress impacts, more female respondents reported that stress often or sometimes affected their physical health ($n = 21$, 17.5%, and $n = 27$, 22.5%, respectively) than did male respondents ($n = 4$, 9.3%, and $n = 4$, 9.3%, respectively).

These findings provide evidence that female respondents experienced a greater stress effect from time factors than did male respondents. In addition, stress had a greater impact on relationships and physical health among female respondents than it did among their male counterparts.

Age. There was a significant difference in the effect of stress on work performance between respondents aged 18-24 years when compared with those 25 years and older, $\chi^2(3, n=163) = 13.592$, $p = .004$, Cramer's $V = .004$. Older

respondents reported greater stress effects, with 3 (12.0%) reporting stress often impeded their work performance and 12 (48.0%) reporting stress sometimes impeded work performance. In comparison, among 18-24 year olds stress often impeded the work performance of 13 (9.4%) respondents and sometimes impeded the work performance of 23 (16.7%) respondents. Cross tabulation showed that this effect could be explained by the observations that respondents who worked more hours per week experienced more stress impacts on their work performance, and that older respondents worked more. However, it was not possible to determine significance of this finding due to low cell counts in the second layer analysis.

Relationship status. Relationship status was significantly related to how well respondents said they managed stress, $\chi^2(6, N = 160) = 10.934, p = .090$, Cramer's $V = .090$. A greater proportion of respondents who were married or living with a domestic partner reported doing a poor job managing stress ($n = 8, 34.8\%$), compared to those who were single ($n = 11, 16.2\%$); in uncommitted or uncertain dating relationships ($n = 1, 6.2\%$); or engaged or in a committed dating relationship ($n = 7, 13.2\%$). However, another 39.1% ($n = 9$) of respondents who were married or living with a domestic partner reported doing a good job managing stress, compared to those who were single ($n = 24, 35.3\%$); in uncommitted or uncertain dating relationships ($n = 4, 25.0\%$); or engaged or in a committed dating relationship ($n = 16, 30.2\%$).

These effects were varied across types of relationships and did not provide a sufficient pattern for meaningful interpretation.

Hispanic ancestry and ethnic origin. There were no significant associations related to Hispanic ancestry and ethnic origin. This is an important finding that appears to indicate a strong degree of homogeneity within this Hispanic student population.

Living arrangements. Living arrangements were significantly associated with the stress of commuting, the influence of stress on social life and relationships, and stress management ability. Respondents who lived on campus experienced lower stress effects related to commuting, $\chi^2(4, N = 163) = 12.328$, $p = .015$, Cramer's $V = .015$. Stressors in the commuting theme included traveling between campuses, time involved in commuting, parking issues and limited access to transportation. Of those respondents who lived off campus, 22.0% ($n = 28$) reported moderate or high stress effects from these stressors compared with 11.1% ($n = 4$) of respondents who lived on campus.

Those who lived off campus also reported a greater influence of stress on their social lives and relationships, with 29.1% ($n = 37$) and 28.3% ($n = 36$), respectively, reporting that stress often had a negative effect on these areas of their lives. In comparison, of respondents who lived on campus, 8.3% ($n = 3$) reported that stress often had a negative effect on their social lives, and 13.9% ($n = 5$) reported that stress often had a negative effect on their relationships. Chi-square results for the association between living arrangements and stress effects on respondents' social lives and relationships were $\chi^2(3, N = 163) = 8.594$, $p = .035$, Cramer's $V = .035$ and $\chi^2(3, N = 163) = 8.403$, $p = .038$, Cramer's $V = .038$, respectively.

In terms of managing stress, 19.7% ($n = 25$) of respondents who lived off campus reported doing a poor job managing stress and 27.6% ($n = 35$) of off-campus residents reported doing a good job managing stress. In comparison, 8.3% ($n = 3$) of on-campus residents reported poor stress management and 50.0% reported good stress management. The chi-square results for the association between living arrangements and stress management was χ^2 ($N = 163$) = 7.134, $p = .028$, Cramer's $V = .028$.

These findings provide evidence that living on campus was a protective factor in a number of ways. Living on campus was protective against the stress of commuting and against stress impacts on social lives and relationships. In addition, living on campus appeared to promote positive stress management practices. This is a significant finding since a large majority of Hispanic undergraduate students in this study lived off-campus (77.9%), and perhaps could have benefited from a residential life experience.

Educational characteristics. First generation college student status was significantly related to the stress effects of commuting, χ^2 (4, $N = 162$) = 10.391, $p = .034$, Cramer's $V = .034$. This relationship remained evident after controlling for living arrangements. Cross tabulation data showed that 85.1% ($n = 57$) of first generation college students in this study lived off campus compared to 73.7% ($n = 70$) of non-first generation students. Layered over this data, 20.9% ($n = 14$) of first generation college student respondents reported moderate stress effects and another 6.0% ($n = 4$) reported high stress effects due to commuting. In comparison, 13.7% ($n = 13$) of respondents whose

parents had attended and/or graduated from college reported moderate stress effects and another 1.1% ($n = 1$) reported high stress effects from commuting.

There was a significant association between year-in-school and the negative impact of stress on mental health, $\chi^2(12, N=163) = 29.681, p = .003$, Cramer's $V = .003$. However, examination of the cross tabulation for these data did not show a discernible pattern for this effect.

Self-reported cumulative grade-point average was related to respondents' ability to manage stress, $\chi^2(6, N = 163) = 15.222, p = .019$, Cramer's $V = .019$. The cross tabulation for this data shows a pattern of better stress management among those respondents with a higher grade-point average and poorer stress management among those respondents with a lower grade-point average, as shown in Table 10. This pattern provides compelling evidence for initiating stress management training for students with weak academic performance indicators.

Table 10

Effective Stress Management and Grade-Point Average

Stress Management Ability in the Last 12 Months	Cumulative Grade-Point Average			
	2.4 or lower	2.5-2.9	3.0-3.4	3.5 or higher
	n (%)	n (%)	n (%)	n (%)
Did a poor job	6 (42.9)	10 (27.8)	8 (14.3)	4 (7.0)
Did a fair job	5 (35.7)	17 (47.2)	31 (55.4)	29 (50.9)
Did a good job	3 (21.4)	9 (25.0)	17 (30.4)	24 (42.1)

As discussed, meaningful associations between educational characteristics and stress were evident. Findings indicate that first generation college students were more at risk for experiencing stress from commuting, in part because a greater proportion of these students live off campus than do non-first generation students. Study results show a powerful relationship between effective stress management and cumulative grade-point average. Lower grade-point averages were associated with less effective stress management, and higher grade-point averages were associated with more effective stress management.

Student involvement. Student involvement was recoded into two values: "involved" and "not involved" in a student organization in the past 12 months. This was done to increase the count in each cell for the chi-square test. There were no significant relationships between student involvement and stress or performance effects.

Academic support classes. Academic support classes were recoded into two values including "none" and "used one or more" in the past 12 months. Activities grouped for analyzing academic support classes included a freshman orientation class known as ASU 101, similar academic support classes that range in commitment from one to three credit hours, and scholarship programs.

There was a significant association between this variable and the stress effect of personal concerns, $\chi^2(4, N = 169) = 12.100, p = .017, \text{Cramer's } V = .017$. Cross tabulation showed that respondents who participated in academic support classes reported a higher stress effect from personal concerns than those who did not participate, with 17.9% ($n = 18$) of academic support class participants reporting a moderate to high stress effect, compared to 4.4% ($n =$

3) of non-participants in the classes. Cross tabulations were performed to determine whether these effects stemmed from a particular component of this stress theme. Academic success classes had a higher stress effect than did scholarship programs. It was not possible to determine significance due to the low cell count of the chi-square test in the second layer analysis.

Personal concerns included the desire to overcome negative stereotyping, pressure to succeed to make a good name for your ethnic/racial group, feeling guilty for having the privilege of getting a college education and concerns about physical appearance. Such concerns may draw students to take academic support classes and programs designed to facilitate success in an effort to address these issues. It is also possible that the academic focus of the class compels students to worry more about their potential for success.

Although findings from this study show that respondents who participated in academic support classes experienced a higher level of stress due to personal concerns, it is not known what factors contributed to the stress effect of personal concerns among respondents who took these classes.

Student services. Student services that showed significant relationships with stress and performance effects included wellness services and fitness centers. Wellness services included health, counseling, and disability resource centers. Significant associations with wellness services included stress effects from financial and time concerns; and performance effects from mental health issues [$\chi^2(4, N=169) = 9.984, p = .041, \text{Cramer's } V = .041, \chi^2(4, N = 169) = 9.608, p = .048, \text{Cramer's } V = .048, \chi^2(8.045, N=169) = 5.858, p = .016, \text{Cramer's } V = .016$]. Stress effects from financial concerns were associated

with a moderate to high stress effect among 34.9% ($n = 45$) of respondents who had not used these services. In comparison, 50.0% ($n = 20$) of respondents who had used these wellness services reported moderate to high stress effects due to financial concerns. This difference may be related to the expenses associated with using health and counseling services. Keeping fees for services low may help to reduce financial stress.

Stress effects from issues with time management were associated with a moderate to high stress effect among 35.6% ($n = 46$) of respondents who had not used these services, compared to 62.5% ($n = 25$) who had. This may be explained in part by the time commitment of attending appointments or counseling sessions. In addition, time spent being ill or recovering from physical or mental conditions can impede one's ability to keep up with the many responsibilities students have to fulfill.

Mental health issues had a moderate or serious performance effect among 23.3% ($n = 30$) of respondents who did not use wellness services compared to 45.0% ($n = 18$) of respondents who did. This observation is likely due to the inclusion of counseling services in the wellness services category, since those who use counseling services are typically seeking assistance for a mental health or emotional health problem that is interfering with daily living.

These data provide evidence that stress effects from financial stress and time factors were higher among respondents who used wellness services. Mental health related stress was also more common among these respondents. This is likely due to the cost in money and time that is needed when dealing with and taking actions to prevent physical and mental illnesses.

Physical activity contributes to physical and mental health and is recognized as an important stress management strategy (Gauvin & Spence, 1996; Rimmelmeier et al, 2009). This appears to be supported by the observed relationship between stress management and use of fitness centers, $\chi^2(2, N = 169) = 6.222, p = .045$, Cramer's $V = .045$. Of respondents who used fitness centers within the last 12 months, 42.9% ($n = 30$) reported doing a good job managing stress compared to those who did not use a fitness center, at 27.3% ($n = 27$). Furthermore, a small percentage of those who used fitness centers reported doing a poor job managing stress, 10.0% ($n = 7$), compared to 21.2% ($n = 21$) of those who did not use fitness centers.

The relationship between fitness center use and effective management of stress is not predictive: it is not known whether respondents who manage stress are more likely to engage in fitness or vice versa.

There was a significant association between the stress effects of physical health and fitness center use, $\chi^2(4, N = 169) = 9.581, p = .048$, Cramer's $V = .048$. Of respondents who used fitness centers within the last 12 months, 18.6% ($n = 13$) reported experiencing a moderate to high stress effect due to physical health concerns compared to 6.0% ($n = 6$) of those who did not use fitness centers. The proportion of respondents ages 18-24 who used the fitness center ($n = 65, 47.1%$) was significantly greater than those ages 25 and older ($n = 5, 20.0%$), $\chi^2(1, N = 163) = 6.345, p = .012$, Cramer's $V = .012$. Furthermore, a greater proportion of the 18-24 year old group reported moderate to high stress effects of physical health, at 12.3% ($n = 17$) compared to 4.0% ($n = 1$) of the older respondent group.

The relationship between fitness center use and stress from physical health concerns appears to be related to the age of fitness center participants, with younger participants experiencing a greater level of stress due to physical health concerns.

Financial concerns were related to fitness center use, $\chi^2(4, N = 169) = 14.437, p = .006, \text{Cramer's } V = .006$. Of respondents who used fitness centers within the last 12 months, 28.6% ($n = 20$) reported moderate stress effects and 18.6% ($n = 13$) reported high stress effects from financial concerns. In comparison, those who did not use fitness centers reported less serious stress effects related to finances, with 25.8% ($n = 24$) reporting moderate stress effects and 8.6% ($n = 8$) reporting high stress effects from financial issues. Controlling for age, it appears that respondents ages 18-24 influenced the association between fitness centers and financial stress effects, as there was a significant relationship for this group, but not for the older respondents who used the fitness centers [$\chi^2(4, N = 138) = 9.494, p = .050, \text{Cramer's } V = .050, \chi^2(3, N = 25) = 5.357, p = .147, \text{Cramer's } V = .147$, respectively].

Relationships between fitness center use and stress were evident in this study. Respondents who used fitness centers reported more managing stress more effectively than did non-users. Fitness center users ages 18-24 experienced greater stress related to physical health concerns and financial concerns than did fitness center users ages 25 and older.

Summary of Significant Relationships. Only a few meaningful significant relationships were identified in this study. This may be due to the

limitations the small sample size placed on the statistical tests used. Several relationships are worth noting. A summary of these findings includes:

- 1) Female respondents experienced a greater stress effect from time factors than did male respondents. In addition, stress had a greater impact on relationships and physical health among female respondents than it did among their male counterparts.
- 2) Living on campus was protective against the stress of commuting and against stress impacts on social lives and relationships. In addition, living on campus promoted positive stress management. This information is particularly meaningful because more than three-fourths of the respondents in this study lived-off campus.
- 3) First generation college students are more at risk for experiencing stress from commuting, in part because a greater proportion of these students lived off campus compared with non-first generation students.
- 4) Respondents with high grade-point averages reported more effective stress management than did respondents with low grade-point averages.
- 5) Respondents who took academic support classes experienced a higher level of stress due to personal concerns compared with those who did not take academic support classes.
- 6) Stress effects from financial stress and time factors, and performance effects from mental health-related stress were higher among respondents who used wellness services.
- 7) Fitness center users reported more effective stress management than non-users. Fitness center users ages 18-24 experienced more stress

related to physical health concerns and financial stress than did those fitness center users ages 25 and older.

Stress reduction and relief. Although the focus of this study was on the causes of stress, data was also collected to examine which activities Hispanic students participate in that help them to reduce or relieve their stress. Stress reduction and relief activities were categorized by theme on the survey. Themes included physical activities, sedentary activities, relaxation, getting away, involvement, spending time with friends and family, problem solving, talking, and staying positive. Themes were tested for reliability using Cronbach's Alpha to ensure activities were a good fit in their assigned themes. In addition, responses to stress relief questions were recoded as follows: "did not experience/not applicable" and "never" were combined to make a "never" category; "rarely" and "seldom" were combined to make a "seldom" category; "sometimes" remained unchanged; and "often" and "almost always" were combined to make an "often" category. This is consistent with other variables of frequency in this study. Themes, question numbers included in each theme, and Cronbach's Alpha are presented in Table 11. Stress management themes and their frequency reports are presented in Table 12. Both tables present the themes in descending order as determined by the percentage of respondents who often engaged in the activity during the last 12 months.

Table 11

Cronbach's Alpha for Stress Reduction and Relief Themes

Theme	Question Numbers	Cronbach' s α
Physical Activities	29 a	0.803
Sedentary Activities	29 b	0.728
Relaxation	29 c	0.824
Getting Away	29 d	0.858
Involvement	29 e	0.585
Spending Time	29 f	0.661
Problem Solving	29 g	0.910
Talking	29 h	0.784
Staying Positive	29 i	0.815

Table 12

Participation in Stress Reduction and Relief Activities

Theme	Sometimes		Often	
	<i>n</i>	%	<i>n</i>	%
Physical Activities	7	4.1	14	8.3
Sedentary Activities	13	7.7	8	4.7
Relaxation	4	2.4	7	4.1
Getting Away	17	10.1	27	16.0
Involvement	0	0	1	0.6
Spending Time	12	7.1	9	5.3
Problem Solving	6	3.6	7	4.1
Talking	6	3.6	4	2.4
Staying Positive	12	7.1	18	10.7

Note: Sometimes is defined as monthly or more often. Often is defined as weekly or more often.

Phase Three—Results of the Key Stakeholders Meeting

Description of the participants. Of the 41 potential participants invited to attend the key stakeholder meeting, 16 attended. Participants included 13 student service department directors representing the four Arizona State University campuses, two Associate Vice Presidents within student services, and two members of the faculty including a member of the Faculty Senate. The aim of this meeting was to present preliminary findings and emerging recommendations from this study in order to garner input from individuals positioned to facilitate change. Prior to this meeting, student services representatives had participated in a directors meeting that engaged them in a discussion about the importance of student wellness in general and how their departments could be more active in supporting a culture of wellness at the university. This discussion primed participants for a more in-depth dialogue about the stress experienced by Hispanic students. A flipchart was used to record comments and recommendations.

Presentation contents. A brief overview of the study was followed by a presentation of preliminary findings. Stress and performance effect themes were not yet developed; therefore, data presented reflected the responses to individual questions on the survey. The following data was presented, using power point graphs to illustrate the findings:

- Self-assessment of success in managing stress
- Negative influence of stress on areas of life
- Overall academic impact of all stress experienced

- Top 10 stress and performance effects related to each of the NASPA ecological dimensions. The percentage of respondents who reported high stress effects and serious performance effects within each ecological dimension were presented side by side in a bar chart for visual comparison.

Key stakeholder discussion and recommendations. Participants showed an active interest in the findings, which was evident by the questions and discussion that followed each slide. The findings on stress and performance issues related to managing time and finances led to discussion about whether these skills are taught in academic support classes and how to enhance education in these areas. Data showing stress and performance effects from academic responsibilities, time spent doing homework and dealing with academic processes led to discussion about academic support services, tutoring, and study skills training. Stress and performance impact stemming from family problems and responsibilities led to discussion about ways to help students develop their independence while maintaining bonds with their families. It was noted that stress and performance effects related to parking, transportation, and travel between campuses were likely to be related to the financial burden of commuting. It was also noted that trouble finding a current job and concerns about respondents' chosen career path were related to financial stress. This observation led to discussion about the potential role of career services and academic support programs in helping students to choose a suitable major and hold hope for their future career.

One participant observed that it seemed like respondents did not have a clear understanding about how much impact stress has in their lives. The study data shows that a high proportion of undergraduate Hispanic students are reporting high and very high stress levels, yet in comparison few were connecting their stress levels to negative academic performance impact. For example, 37.1% of the respondents reported that high stress levels were caused by being over-committed. Yet only 11.8% reported experiencing serious academic performance impact from this stressor. Whether this was a correct observation was not the focus of this study.

Ideas with potential for action that emerged during the discussion were:

- Identify strategies for early identification of counseling and financial problems.
- Provide training for employees who have frequent contact with students, recognizing their potential role in guiding students to resources and education needed to avert negative outcomes.
- Include families in education about managing finances, scholarships and loans.
- Begin education about the process for obtaining scholarships and loans as early as middle school.
- Incorporate budget and time management training into orientation and ASU 101 classes.
- Disseminate findings from the study to motivate faculty to meet training needs identified in the study through education in the classroom.

- Provide programs and information within colleges and schools regarding potential career paths available through the students' field of study.

Follow-up to the key stakeholder meeting. Invitations to present survey results and lead a discussion on potential departmental actions came from two student services departments after the meeting. In addition, an invitation to make a presentation of the study and resulting recommendations to the Faculty Senate was made. There appears to be strong interest in continuing the dialogue about the stress experienced by undergraduate Hispanic students and a desire to take action to reduce negative effects from stress within this growing student population.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

This study provides evidence that stress has a significant influence on the academic performance of Hispanic undergraduate students attending Arizona State University. Results of focus groups, interviews and a survey indicated that stressors related to family, time factors, finances, and academics had the most profound stress and performance effects among study participants. Stressors with moderate or low impact also have a considerable effect, as many of these stressors influence stress levels attributed to more predominant stressors themes and contributed to the overall stress levels of the participants. This chapter will discuss the impact of stress on academic performance and other areas of life; top stressors and performance effects identified in this study; the impact of overall stress; stress management concerns and protective factors; the utility of using the ecological model to examine and address the stressors studied; recommended actions; and recommendations for future research.

In the context of this discussion, it is important to remember that the study participants are more than numbers, percentages and statistics. They are real people. They are undergraduate Hispanic students whose academic potential is being negatively affected by stress. The academic success of these students can have an important influence on their personal well-being and that of their families and communities. Institutions of higher education concerned with the academic success and progress to graduation of these students can make a difference by identifying common and serious stressors, and addressing

these through policies, programs, and services. This is the basis of this study and this discussion.

Stress Impact on Academic Performance

Stress had a considerable impact on many areas of life among Hispanic undergraduate students in this study. Most important to this study was the effect of stress on academic performance. Over one-third ($n = 61$, 36.1%) of respondents reported that their academic performance was impeded by stress at least weekly (often). Stress often had a negative influence on their ability to concentrate ($n = 53$, 31.4%) and to sleep ($n = 52$, 30.8%), factors that can take a toll on academic performance.

Data for academic performance effects (*performance effects*) across all stressor themes studied indicated 41 (24.3%) respondents had received an incomplete or dropped a course at least once in the past 12 months. A subset of 27 (65.9%) of the respondents who had received an incomplete or dropped a course had also received a lower grade in a course due to stress. An additional 44 (26.0%) respondents had received a lower grade in a course due to stress. Thus, 85 (50.3%) respondents had experienced at least one serious performance effect from stress in the last year. Many of the respondents who endorsed these serious performance effects did so multiple times within the survey. Furthermore, academic disruptions consistent with these serious performance impediments attributed to stress were experienced by 114 (67.5%) respondents. These findings indicate the need for action to reduce stress and its impact on academic performance among Hispanic undergraduate students.

Stress Impact on Non-Academic Areas of Life

Stress had a negative influence on several areas of life among the study participants. One-fourth ($n = 41$, 24.2%) of respondents indicated that stress levels often had an impact on their social lives and/or their relationships. One-in-five ($n = 36$, 21.3%) survey respondents reported that their ability to fulfill family responsibilities was often impeded by stress. Although stress did not appear to have as frequent an effect on mental health ($n = 30$, 17.7%) and physical health ($n = 26$, 15.3%), these conditions can lead to academic disruptions, further contributing to stress and to negative academic outcomes. Work was a responsibility reported by 67.4% ($n = 114$) of respondents, many of whom were funding at least a portion of their education. The observation that 9.5% ($n = 16$) of respondents often experienced stress as an impediment to work performance has potential ramifications for performance effects from financial stress and related stressors such as commuting, physical and mental health, and legal problems.

Top Stressors and Performance Effects

For the purpose of this discussion, stressors were categorized as having serious effects, moderate effects and low effects. Stressors that had the most serious effects on stress and academic performance were related to family, time factors, finances, and academics. The mean stress effect of each of these stressors was 3.0 or greater, and affected the academic performance of at least 12.5% of the Hispanic undergraduate student participants in this study. Moderate stress and performance effects were evident in stressors related to mental health, technology, commuting, personal concerns, physical health and

legal problems. These stressors had a mean stress effect of 2.5-2.9 and/or had a serious performance effect among 3.0% or more of study participants. These stressors contribute to the more serious stressors and are discussed in the context of those stressors. Low level stressors included societal concerns, issues with instructors, relationships, discrimination, the physical environment (place), media leisure time, crime, and substance abuse. These stressors are discussed in relationship to their association with more serious stressors. Consistent with the ecological model is the recognition that all of the identified stressors influence overall stress and contribute to the overall impact of the other stressors.

Family stressors. Several of the areas of life that stress was shown to effect were also prominent stressors among the study group. For example, family stressors had the highest stress effect ($M = 3.88$, $SD = 1.26$) among the survey respondents and impeded the academic performance of 32.5% ($n = 55$) of respondents moderately, with an additional 6.5% ($n = 11$) of respondents reporting that stress was a factor in getting a lower grade in a course, dropping or getting an incomplete in a class. Half ($n = 84$, 49.9%) of the respondents had some level of responsibility for caring for dependents or other family members. Family was also involved in funding education. Families contributed at least 25% of the school expenses of 18.5% ($n = 31$) of respondents. Student participants in the focus groups indicated that family pressure to succeed in school was stressful. On the other hand, focus group participants viewed time spent with family as a relief to stress. Spending time with family and friends was a common activity, with 7.1% ($n = 12$) of respondents engaging in this activity

at least monthly and another 5.3% ($n = 9$) engaging in the activity at least weekly. Thus family served as a stressor, a stress effect and a stress reduction strategy.

Time factors. Time factors showed a considerable impact on respondents ($M = 3.55$, $SD = 1.33$, performance effect- $n = 47$, 27.8%). Included in this theme was being over-committed, poor time management practice, and lacking time for self-care. Stressors related to time included academics, family, mental and physical health, and legal problems, which contribute to both stress and performance effects. Female respondents reported a higher stress effect from time factors, and a more negative impact due to stress on their physical health than did male respondents, $\chi^2(4, n=163) = 10.823$, $p = .029$, Cramer's $V = .029$ and $\chi^2(3, n=163) = 8.333$, $p = .040$, Cramer's $V = .040$, respectively. It may be that female Hispanic undergraduate students are more aware of these issues than their male counterparts. Regardless of the underlying cause, it appears these female Hispanic undergraduate students would likely benefit from training in time management and healthy lifestyle practices.

Utilization of wellness services was significantly related to the time theme, with a moderate to high stress effect among 35.6% ($n = 46$) of respondents who had not used these services, compared to 62.5% ($n = 25$) who had, $\chi^2(4, N = 169) = 9.608$, $p = .048$. This may be explained in part by the time commitment of attending appointments or counseling sessions. In addition, time spent being ill or recovering from physical or mental conditions can impede on one's ability to keep up with the many responsibilities students have to fulfill.

Time spent outside of work and school on the internet, social media or video games was defined in this study as media leisure time. This stressor had moderate stress and performance effects among respondents ($M = 2.04$, $SD = 1.03$; performance effect- $n = 15$, 8.9%). With the many commitments, responsibilities and leisure activities that are a part of student's lives, learning how to manage time may be one of the most important educational activities needed in order for students to achieve their optimal academic potential.

Financial stressors. Results of this study provide evidence that financial stressors were a primary contributor to Hispanic undergraduate student stress and performance effects ($M = 3.51$, $SD = 1.21$; performance effect – $n = 21$, 12.5%). Included in the financial stress theme were the cost of education, concerns about paying back student loans, and understanding scholarship application processes. While 70.4% ($n = 119$) of respondents had received scholarships, many of this respondents also relied on some form of personal or family support, or student loans, to fund their education. In addition to the family's contribution, 69.2% ($n = 117$) of respondents were paying at least 25% the costs associated with their education. The majority of respondents ($n = 101$, 59.7%) had taken out student loans to fund their education. These expenses contribute to financial stress; however, the cost of higher education consists of more than the cost of tuition and fees. For example, commuting, physical health, mental health, legal problems, and career concerns are related in part to financial stress. These relationships support the use of the ecological model in examining the effects of stress and designing plans to address it.

Commuting had a moderate stress effect among respondents ($M = 2.67$, $SD = 1.20$). This stressor theme included the costs of parking and traveling to and from school and between campuses (performance effects – $n = 18$, 10.7%). Living arrangements were significantly related to the stress theme of commuting, with off-campus residents reporting a greater stress effect, $\chi^2(4, N = 163) = 12.328$, $p = .015$, Cramer's $V = .015$. First generation college students appeared to be more at risk for commuting stress, in part because a larger proportion of these students lived off campus ($n = 57$, 85.1%), $\chi^2(4, N = 162) = 10.391$, $p = .034$, Cramer's $V = .034$.

As with commuting, physical and mental health stressors were determined to be moderate stressors that were related to financial stress ($M = 2.50$, $SD = 1.03$, performance effects – $n = 14$, 8.3%). Physical health expenses can include fees for services, and costs associated with insurance, prescription and over-the-counter medications, wellness products, programs and supplies, and related expenses, which can result in a financial burden. Mental health issues produced considerable stress and performance effects and can result in costs similar to those associated with physical health ($M = 2.94$, $SD = 1.41$, performance effects – $n = 48$, 28.4%). Fifty percent of respondents who used wellness services experienced financial stress. In addition, there was a significant relationship between financial stress and respondents ages 18-24 who used the campus fitness centers, $\chi^2(4, N = 138) = 9.494$, $p = .050$, Cramer's $V = .050$.

Another stressor likely to contribute to financial stress is legal problems, which frequently involve major expenses related to legal fees, missed work and

transportation expenses. Survey respondents reported experiencing stress and performance effects related to legal problems ($M = 1.39$, $SD = 1.14$, performance effect – $n = 13$, 7.7%). Another stressor related to financial stress is career concerns. Respondents expressed concerns about their future career prospects, in part because of the expense of education, and in part due to their concern about being able to afford their basic living expenses in this current economy (societal stressor theme, $M = 2.37$, $SD = 1.14$, performance effect – $n = 7$, 4.2%). Working at a job to make ends meet may reduce some of the financial burden. Over 40% (67.6%) of respondents worked 20 hours or more per week. However this strategy leaves less time for academic responsibilities, family, and other commitments, which can result in a higher level of stress.

Academic stressors. Academic performance was affected by stress, yet academic responsibilities were the fourth leading stressor among the survey respondents ($M = 3.27$, $SD = 1.11$). It is paradoxical that students who aspire to graduate from an institution of higher education experience academic responsibilities as academic performance impediments. However, respondents reported that academic-related stressors such as homework, academic advising, and scheduling the classes they need produced negative performance effects ($n = 23$, 13.6%), as did issues with instructors ($n = 19$, 11.3%), and problems with access to and proper functioning of technology ($n = 30$, 17.8%). Together, these academic stressors have a considerable impact on Hispanic undergraduate students.

Strategies that students used to reduce and relieve stress that related to academic, instructor and technology themes included problem solving (getting

ahead on homework, managing time), and staying positive. Respondents engaged in these activities sometimes ($n = 6, 3.6\%$; $n = 12, 7.1\%$, respectively) and often ($n = 7, 4.1\%$; $n = 18, 10.7\%$, respectively). Nearly half ($n = 78, 47.4\%$) of the respondents reported that they did school work for at least 20 hours per week, an activity that can help reduce negative effects from stress on academic performance. This information can be useful in developing strategies to address academic stressors that are relevant to this student population.

The impact of overall stress. It is worth noting that all stressors, even those with low or moderate stress and performance effects contribute to the overall stress that a student is experiencing at any given time. Participants of focus groups and interviews in this study noted this effect. Among survey respondents 55 (32.5%) reported serious performance effects and 74 (43.8%) reported moderate performance effects from overall stress. Thus, stressors such as relationships, place, crime, and alcohol or other drugs, which demonstrated low stress and performance effects are still important to address ($M = 2.19, SD = 1.01, n = 3, 1.8\%$; $M = 2.16, SD = .72, n = 3, 1.8\%$; $M = 1.63, SD = .071, n = 0$; $M = 1.11, SD = 0.42, n = 5, 3.0\%$, respectively).

Societal and discrimination stressors likely contribute to the overall stress effect. While these stressors showed low stress effects among respondents ($M = 2.37, SD = 1.14$; $M = 2.18, SD = 1.26$, respectively), it is worth noting that these stressors had a negative influence on academic performance among 4.2% ($n = 7$) and 3.0% ($n = 5$) of respondents, respectively. Included in these themes were global environment issues, war, and the current economic crisis (societal); and attitudes toward undocumented people, Arizona immigration laws,

and discrimination experienced by the respondents. Recent Arizona immigration laws have increased attention to and concern about undocumented people in Arizona, leading many undocumented people to leave the state, and resulting in concern about the potential legal and criminal problems that documented and undocumented individuals may experience due to these laws (American Immigration Council, 2011; Archibold, 2010). While these laws contributed to the overall level of stress, findings did not show a major stress or performance effect as a result of these laws. Similarly, stress related to personal concerns included the pressure to overcome negative stereotypes and feeling guilty about the privilege of getting a college education. Other components of this theme included concern about personal appearance, and fear of failure. The personal concerns theme had a moderate stress effect ($M = 2.62, n = 1.05$) and was a negative influence on the academic performance of 5.9% ($n = 10$) of respondents.

Stressors identified by this study as having considerable stress and performance effects included academics, finances, family, time, mental health and overall stress. Many of the additional stressor themes examined in the survey are interrelated with these predominant stressors, and contribute to the stress and performance effects of the predominant themes. In addition, all stressor themes identified in this study contribute to the overall stress that respondents experienced, whether they contributed at a low, moderate or serious level. This study provides evidence that overall stress also contributes negatively to the stress and performance effects experienced by Hispanic undergraduate students.

Stress Management Concerns and Protective Factors

The majority of respondents indicated doing a fair ($n = 84, 49.7\%$) or good ($n = 52, 30.8\%$) job managing stress. However, the remaining 20.0% ($n = 33$) of respondents did a poor job managing stress. Results of this study indicated that off-campus residents assessed their stress management skills more poorly than did on-campus residents ($n = 25, 19.7\%$; $n = 3, 8.3\%$, respectively). In contrast, only 27.6% ($n = 35$) of off-campus residents reported doing a good job managing stress compared to 50.0% ($n = 18$) of on-campus residents. Utilization of the fitness centers was also related to better stress management, $\chi^2(2, N = 169) = 6.222, p = .045$, Cramer's $V = .045$. This effect was in part because a greater proportion of on-campus residents were fitness center participants. Thus, it appears that living on campus and fitness center participation served as protective factors for better stress management. These findings suggest that stress management skills training would benefit students who live off campus. However, off-campus residents are not as easily accessible for student services programming. It may be challenging to identify the best strategies for support of the off-campus Hispanic student population.

Findings from this study provide evidence that grade-point average is related to students' ability to manage stress, $\chi^2(6, N = 163) = 15.222, p = .019$, Cramer's $V = .019$. As self-reported cumulative grade-point average increased among respondents, so did the percentage of respondents who assessed their stress management as good. As their grade-point averages decreased, so did the proportion of respondents who assessed their stress management as poor. Specifically, 24 (42.1%) respondents with a grade-point average of 3.5 or higher

indicated they did a good job managing stress, compared to 3 (21.4%) respondents with a grade-point average of 2.4 or lower. In contrast, 4 (7.0%) respondents with reported grade-point averages of 3.5 or higher indicated they did a poor job managing stress compared to 6 (42.9%) of respondents with grade-point averages of 2.4 or lower. This pattern provides compelling evidence for early identification and supportive services to help students with weak academic performance indicators better manage stress.

Student services. Student services and academic support classes are designed to aid students in navigating university processes, teach study and time management strategies, and provide access to services that can help students progress to graduation successfully, among other objectives. Findings from this study provide evidence that student utilization of some university services can mitigate stress effects. For example, respondents' use of campus fitness centers was significantly related to better stress management, as was living on campus in university housing. Living on campus was also related to a low stress impact on relationships and social life, [$\chi^2(3, N = 163) = 8.594, p = .035$, Cramer's $V = .035$ and $\chi^2(3, N = 163) = 8.403, p = .038$, Cramer's $V = .038$, respectively]. Benefits of other support programs provided through the university were not demonstrated in this study.

It is notable that financial concerns presented as a predominant stressor, affecting the academic performance of 12.5% ($n = 21$) of respondents, yet only 6.5% ($n = 11$) respondents had taken one of the online money management programs provided through the university. Mental health concerns presented as another predominant stress, affecting the academic performance of 28.4% ($n =$

48) of respondents, yet only 11.2% ($n = 19$) of respondents had utilized the university counseling services. Stress affected the physical health of 15.3% ($n = 26$) of respondents on a weekly basis and another 19% ($n = 32$) on a monthly basis, and yet only 14.8% ($n = 25$) had utilized the university health services. In summary, despite the apparent need for services, there was a gap in access to these resources by respondents over the past 12 months.

Utility of the Ecological Model

This action research project was designed to identify stressors that have negative impact on self-reported academic performance and persistence measures among Hispanic undergraduate students in the context of the NASPA ecological model (NASPA, 2004). The ecological model frames social, behavioral and environmental problems as systems issues with multidimensional, inter-relational, and synergistic qualities. As an action research project, this study examined Hispanic stress through this systems lens, recognizing the interplay between individuals; their relationships; the places they live, work, learn and play; the university; and the community or society in which these dimensions interact. Findings from this study confirmed the usefulness of the ecological model to frame the problem, to illustrate the inter-connectedness and synergy of the stressors identified, and to elicit ownership for resolving and mitigating stressors that impact Hispanic undergraduate academic performance.

Recommended Actions

Action research is applied research that is conducted within a context familiar to the researcher in an effort to change a social situation (Bargal, 2008; McNiff & Whitehead, 2002). This action research project is the outcome of a

longstanding observation by the researcher that the majority of information published about college student stress tells the story of stress for White college students, who make up the majority of study subjects in college health behavior studies, and make up the majority of college students in the United States. It is this researcher's assertion that this singular focus on the majority student must change to meet the needs of our current students, communities, and work places. Thus, the aim of this research project was to find out which stressors impede academic performance among Hispanic undergraduate students in an effort to refocus the dialogue about student stress, and ultimately about student wellness, to include subgroups of the whole student population. It is the investigator's hope that this study will lead to more studies addressing Hispanic college student wellness, and to studies of the health impediments to academic performance of other populations of college students.

Recommendations of this study are intended to support the academic success of Hispanic undergraduate students at Arizona State University by addressing and reducing the effects of stress within this population. It was important to involve key stakeholders in a dialogue in the development of these recommendations. This step was taken in order to incorporate insights and recommendations of student service professionals and faculty into the recommendations resulting from this study and to identify advocates and leaders motivated to put the recommendations into practice. Action research is a cyclical process of repeated inquiry, change and evaluation (Dickens & Watkins, 1999). The following recommendations are proposed to begin a dialogue leading to the next steps of this cycle. In conjunction with any of these actions taken is the

recommendation that any change(s) be monitored and evaluated to determine the benefits and limitations, facilitate improved responses, and ultimately contribute to continuous reduction in the negative impact of stress on academic performance and improvement in academic success measures among Hispanic undergraduate students.

- 1) Disseminate the findings of this study within academic and student services departments in an effort to increase awareness of the magnitude of stress impacts on the academic performance and personal lives of Hispanic undergraduate students and to motivate action within departments to develop meaningful policies, programs, and services to respond to the identified needs.
- 2) Increase awareness and utilization of student services through effective communications and promotions at various critical points in the academic progression: orientation, welcome activities, academic advising encounters, mid-terms, finals, moving off campus, etc.
- 3) Require incoming freshmen to attend an academic support course that teaches money management, time management, study skills, and stress management, and enhances knowledge and awareness of university services available to support student success.
- 4) Train faculty, staff, and student employees to recognize early warning signs of stress and academic performance impacts and to make appropriate referrals to support services. Provide education to enhance faculty and staff efforts to create a university environment that reduces unnecessary stress.

- 5) Enhance orientation for Hispanic students and their parents by incorporating information regarding the pressures of undergraduate college education and the importance of academic and student services for student success.
- 6) Identify Hispanic students who are failing or falling behind in class as early as possible in order to provide early intervention for stress and distress, and to direct students to academic and student services.
- 7) Utilize online assessments, phone apps, Youtube videos, podcasts, social media, the internet and other digital methods to provide education and support among undergraduate Hispanic students and gatekeepers.
- 8) Increase participation in online wellness assessments that can help Hispanic undergraduate students identify their personal stressors and follow-up with education and support services to improve their capacity to manage stress.
- 9) Promote student use of counseling and health services for prevention and intervention of health and mental health issues.
- 10) Expand career service programs to help students identify desirable career paths and build hope for their future economic situation.
- 11) Increase availability of financial assistance for student housing to enable a greater proportion of Hispanic undergraduate students to live on campus.

- 12) Expand peer mentor programs and establish study groups of Hispanic undergraduates to increase peer support and academic support through peer relationships.
- 13) Utilize campus fitness centers as places to educate and provide resources for students to address the stress needs identified by Hispanic undergraduate fitness center users, including physical health and financial concerns.

Recommendations for Future Research

- 1) Stressors related to family had the most serious impact on stress and academic performance of all the stressors examined in this study. Yet family was also considered to be a support system and essential to stress management among respondents. It is clear that Hispanic undergraduate students experience serious academic impacts from this important part of their lives, yet it is unclear how to mitigate this effect, or what unintentional impact changes to the family system might have. Furthermore, it is not clear what role the university can or should play in addressing family-related stressors. Research is needed to shed light on this problem.
- 2) Results from this study suggest that Hispanic undergraduate students would benefit from enhanced skills in the areas of time, stress and money management, study skills, and coping. Such skills could be taught and practiced using a variety of learning modalities including the classroom, online modules, group settings, social marketing and other methods. A study to examine the effectiveness of a planned

intervention or combination of interventions is needed to determine the most effective skill development strategies and delivery methods for achieving improved skills that also lead to better academic outcomes. An intervention study to assist students in overcoming the effects of stress is being undertaken at the Ohio State University, and could serve as a model for a similar study to be conducted at Arizona State University among Hispanic undergraduate students (B.M. Melnyk, personal communication, April 11, 2012).

- 3) Stress effects for personal concerns were higher among students who had taken academic support classes. Personal concerns included the desire to overcome negative stereotyping, pressure to succeed to make a good name for your ethnic group, feeling guilty for having the privilege of getting a college education and concerns about physical appearance. Academic support classes are designed in part to improve self-confidence in the student role, to further student development and to improve academic outcomes. Research is needed to determine whether this finding can be replicated, and if so, to determine why academic support courses have a negative influence on the stress related to these personal concerns.
- 4) It is not known whether the observed stress and performance effects among Hispanic undergraduate students in this study are relevant to other racial and ethnic groups. Future studies should be done to examine these effects among other student populations.

- 5) Findings from this study indicate that living on campus is a protective factor for stress effects of commuting, stress impact on relationships and social life and stress management among Hispanic undergraduate students. However, there is only enough bed space at the university for a small proportion of students to live on campus beyond their freshman year. Research to determine what factors are contributing to the protective effect of campus residency, and whether these can be replicated in other living environments is needed.
- 6) This study found no significant effects between stress, stress effects and performance effects, and student involvement. This was surprising since student involvement is considered to contribute to academic success. Research is needed to determine whether this finding can be replicated, and if so, to explain why student involvement does not positively affect student stress.

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
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APPENDIX A
INSTITUTIONAL REVIEW BOARD APPROVAL



Office of Research Integrity and Assurance

To: Alfredo De Los Santos
ADMIN A 20

From: Mark Roosa, Chair 
Soc Beh IRB

Date: 03/23/2011

Committee Action: Exemption Granted

IRB Action Date: 03/23/2011

IRB Protocol #: 1103006140

Study Title: Hispanic Undergraduate Student Stress

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

APPENDIX B
FOCUS GROUP QUESTIONS

1. What word or words do you use to talk about stressful situations or experiences? What are the common words students use to describe their stress?
2. What situations and experiences cause stress for you?
3. What aspects of the place where you live, work, and study increase the pressure, tension and stress you experience?
4. What policies, procedures, structures and departments at ASU, influence the level of pressure, tension and stress you experience?
5. Which people or groups of people influence your level of stress, tension and pressure?
6. How do the local community, its people, laws, regulations, culture and social life contribute to your stress, pressure and tension?
7. What do other students say causes stress, tension and pressure?
8. What are some ways that you use to relieve or reduce the tension, pressure and stress you experience?
9. Which stressors bother you the most? Do any of the stressors discussed affect your ability to do well in school? Please describe.

APPENDIX C
DEMOGRAPHIC QUESTIONNAIRE

Please tell us about yourself.		
<p>Age: _____</p> <p>Gender:</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Female</p> <p><input type="checkbox"/> Transgender</p> <p>Which best describes your enrollment status?</p> <p><input type="checkbox"/> Part-time</p> <p><input type="checkbox"/> Full-time</p> <p>Are you an international student?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes</p> <p>Are you a veteran?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes</p> <p>Which of the following best describes your academic level (select one):</p> <p><input type="checkbox"/> Undergraduate – 1st year</p> <p><input type="checkbox"/> Undergraduate – 2nd year</p> <p><input type="checkbox"/> Undergraduate – 3rd year</p> <p><input type="checkbox"/> Undergraduate – 4th year or more</p> <p><input type="checkbox"/> Graduate student</p> <p><input type="checkbox"/> Post Doctoral student</p> <p><input type="checkbox"/> Other (please describe)</p>	<p>What is your campus affiliation?</p> <p><input type="checkbox"/> Tempe</p> <p><input type="checkbox"/> West</p> <p><input type="checkbox"/> Polytechnic</p> <p><input type="checkbox"/> Downtown Phoenix</p> <p>Which of the following best describes your role?</p> <p><input type="checkbox"/> Student</p> <p><input type="checkbox"/> Family member</p> <p><input type="checkbox"/> Faculty</p> <p><input type="checkbox"/> Professional Staff</p> <p><input type="checkbox"/> Clergy</p> <p><input type="checkbox"/> Community group member</p> <p><input type="checkbox"/> Other _____</p> <p>_____</p> <p>Where do you currently live?</p> <p><input type="checkbox"/> Campus Residence Hall</p> <p><input type="checkbox"/> Fraternity or sorority</p> <p><input type="checkbox"/> Other university housing</p> <p><input type="checkbox"/> Off-campus with friends/roommates</p> <p><input type="checkbox"/> Off-campus with parent/guardian</p> <p><input type="checkbox"/> Off-campus with other family members</p> <p><input type="checkbox"/> Off-campus by myself</p> <p><input type="checkbox"/> Other _____</p> <p>Are you Hispanic or Latino/a?</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Yes</p>	<p>If you are Hispanic or Latino(a), how do you describe yourself ? (select one or more)</p> <p><input type="checkbox"/> Mexican, Mexican American, Chicano</p> <p><input type="checkbox"/> Puerto Rican</p> <p><input type="checkbox"/> Cuban</p> <p><input type="checkbox"/> Dominican</p> <p><input type="checkbox"/> Central American</p> <p><input type="checkbox"/> South American</p> <p><input type="checkbox"/> Other Hispanic origin _____</p> <p>What is your current relationship status?</p> <p><input type="checkbox"/> Single – not in a relationship</p> <p><input type="checkbox"/> Uncommitted or uncertain dating relationship</p> <p><input type="checkbox"/> Committed dating relationship or engaged</p> <p><input type="checkbox"/> Married / domestic partner</p> <p><input type="checkbox"/> Other _____</p> <p>_____</p> <p>What is your sexual orientation?</p> <p><input type="checkbox"/> Heterosexual</p> <p><input type="checkbox"/> Lesbian</p> <p><input type="checkbox"/> Gay</p> <p><input type="checkbox"/> Bisexual</p> <p><input type="checkbox"/> Queer</p> <p><input type="checkbox"/> Questioning</p>

APPENDIX D
SURVEY QUESTIONS

1. Within the last 12 months, to what extent did you do a good job managing stress?
 - a) Did not experience stress/ not applicable
 - b) Did a poor job managing stress
 - c) Did a fair job managing stress
 - d) Did a good job managing stress
 - e) Did an outstanding job managing stress

2. Within the last 12 months, how often did you experience stress levels to the extent that it had a negative effect on the following?

Answer options:

- a) Did not experience stress/not applicable
- b) Never (0 times)
- c) Rarely (1-4 times)
- d) Seldom (5-11 times)
- e) Sometimes (monthly or more often)
- f) Often (weekly or more often)
- g) Almost always (almost daily or more often)

Areas of life affected:

- a) Your academic performance
- b) Your social life
- c) Your physical health (sick more often)
- d) Your mental health (had panic attacks, became depressed, etc.)
- e) Your performance at work
- f) Your ability to sleep
- g) Your ability to concentrate
- h) Your relationships
- i) Your ability to fulfill family responsibilities
- j) Other, please specify

Stress effects question series: Within the last 12 months, to what extent did the following affect your level of stress?

Answer options:

- a) Did not experience this/not applicable
- b) I experienced this, but it did not increase my stress level
- c) Low effect on my stress level
- d) Moderate effect on my stress level
- e) High effect on my stress level
- f) Very high effect on my stress level

Academic performance effects question series: Within the last 12 months, to what extent did the following have an effect on your academic performance?

Answer options:

- a) Did not experience this/ not applicable
- b) I experienced this, but my academics were not negatively affected
- c) I missed a class or fell behind in my studies
- d) I received a lower grade on an exam or an important project
- e) I received a lower grade in a course
- f) I received an incomplete or dropped a course

Stressors evaluated for stress and academic performance effects question series:

Q3, Q4: Stressors related to commuting

- a) Traveling between campuses
- b) Limited access to transportation
- c) Time involved in your commute
- d) Parking issues

Q5, Q6: Stressors related to crime

- a) Worry that your bike will be stolen
- b) Worry that your property (not bike) will be stolen
- c) Concern about vagrants on campus
- d) Concern about violence on campus
- e) Concern about violence where you live
- f) You actually were a victim of a crime (violence, theft, etc.)
- g) Lack of response to crime(s) you reported to campus police

Q7, Q8: Stressors related to the campus environment

- a) Carrying heavy books, laptop or other educational supplies on campus
- b) Traversing long distances across campus to get to class
- c) Competing for sidewalk space with bikes and skate boards
- d) Living in a city environment
- e) Living on campus
- f) Lack of relief from the heat in hot weather
- g) Lack of quiet places to spend time on campus
- h) Lack of places to hang out on campus between classes
- i) Crowded conditions on campus

Q9, Q10: Stressors related to family and friends

- a) Concern about a troubled friend or family member
- b) Pressure for me to succeed by family and friends
- c) Family problems (financial, illness, relationships, legal trouble)
- d) Family responsibilities (taking care of family members, doing chores, supporting finances)
- e) Unable to spend enough time with family
- f) Concern about undocumented friends or family members
- g) Concern for a friend or family member serving active duty

Q11, Q12: Stressors related to financial issues

- a) Current financial troubles
- b) Problems with getting financial aid on time
- c) Cost of room and board
- d) Understanding scholarships and the application process (requirements, filling out forms)
- e) Trouble finding a job that meets your needs (income, school schedule, etc.)
- f) Work commitments/responsibilities
- g) Concern about paying back student loans
- h) Concern about rising cost of education.
- i) Career related issues (preparing for the job market, worried about finding a good job, etc.)

Q13, Q14: Stressors related to health

- a) Limited food choices on or near campus
- b) Lack of places to store/prepare food brought from home to eat on campus
- c) Personal emotional issue(s)
- d) Personal health issue(s)
- e) Personal physical injury requiring medical care
- f) Personal problem with alcohol or drugs
- g) Personal legal issue(s)
- h) Anxiety
- i) Depression
- j) Having a cold, the flu, or a sore throat
- k) Sleep difficulties
- l) Concern about your physical appearance
- m) Lack of time for activities that relieve stress
- n) Lack of time for health-related activities (regular exercise, healthy eating, sleep, etc.)

Q15, Q16: Stressors related to personal concerns

- a) Feeling guilty about having the privilege of getting a college education
- b) Overcoming negative stereotypes about your ethnic/racial group
- c) Pressure to succeed to make a good name for your ethnic/racial group
- d) Worry that you will fail
- e) Over-committed (not having enough time for everything you need to do)
- f) Extracurricular activities (e.g. campus clubs, organizations, athletics)
- g) Problems with managing your time

Q17, Q18: Stressors related to your relationships

- a) Concern about "fitting in" with other students.
- b) Concern about having different values than peers not in your ethnic/racial group
- c) Concern about finding a romantic partner
- d) Meeting new people
- e) Intimate relationship(s)
- f) Relationships with friends
- g) Relationship difficulties
- h) Roommate difficulties

Q19, Q20: Stressors related to school

- a) Academic responsibilities (homework, writing papers, group projects, tests)
- b) Internship or other academic training program responsibilities
- c) Amount of time spent doing homework
- d) Academic processes (e.g. buying books, getting forms signed, advising)
- e) Lack of help from the university with navigating academic processes
- f) Advising issues
- g) Problems with scheduling the classes you need
- h) Issues with grading practices of your instructor(s)
- i) Lack of consistency in grading (e.g. another instructor would have given you a higher grade for the same work)
- j) Having an instructor who doesn't respond quickly to questions posted through email or Blackboard
- k) Having an instructor that doesn't speak English well
- l) Having an instructor who doesn't know how to use Blackboard
- m) Lack of consistency in how Blackboard is used by different instructors

Q21, Q22: Stressors related to technology

- a) Blackboard going down, freezing, slow or not working properly
- b) Limited access to wireless internet in the places you go on campus
- c) Limited access to wireless internet where you live
- d) Online tests or assignments that don't load correctly
- e) Time spent connecting with friends or family through social media
- f) Time spent exploring on the internet (outside of class, work or household needs)
- g) Time spent playing computer or video games

Q23, Q24: Societal/global stressors

- a) Attitudes toward undocumented persons in the U.S.
- b) AZ immigration laws
- c) The current economic crisis
- d) War
- e) The environment/future of the planet
- f) Discrimination you experienced

Q25 Other: If there are any stressors that you experience that have not been mentioned, and that you feel have a significant impact on your life, please list here, and indicate the influence on stress and academic performance of each.

26. Within the last 12 months, to what extent did your overall level of stress have a negative effect on your academic performance?
- Did not experience this/ not applicable
 - I experienced this, but my academics were not negatively affected
 - I missed a class or fell behind in my studies
 - I received a lower grade on an exam or an important project
 - I received a lower grade in a course
 - I received an incomplete or dropped a course
27. Of the various experiences and situations that increased your stress level during the past 12 months, which one was the most challenging to deal with (write in your answer)?
28. Of the various experiences and situations that had a negative effect your academic performance during the past 12 months, which one was the most challenging to deal with (write in your answer)?
29. Within the last 12 months, how often did the following activities help to reduce or relieve your stress?
- Did not do this/not applicable
 - Did this, and it DID NOT reduce or relieve my stress
 - Rarely (1-4 times)
 - Seldom (5-11 times)
 - Sometimes (monthly or more often)
 - Often (weekly or more often)
 - Almost always (almost daily or more often)
- a) Did something active:
Outdoor recreation (hiking, mountain biking, kayaking, etc.)
Exercising on your own (running, biking, walking)
Working out at the gym or recreational center
Playing in team sports such as basketball, soccer, etc.
Other physical activity (please specify)
- b) Did something less active:
Reading for pleasure (novel, magazine, etc.)
Playing video or computer games
Playing cards or doing a puzzle, or other sitting activities
Listening to music you enjoy
Watching television or movies
Other sedentary activity (please specify)

- c) Did something healthy:
 Sleeping in
 Getting enough sleep so that you feel rested
 Relaxing in a quiet place
 Maintaining a relaxation practice such as yoga, meditation, etc.
 Getting a massage
 Maintaining a healthy eating style
 Other health promoting activity
 Other (please specify)
- d) Getting away:
 Taking a break from your responsibilities for the day
 Taking a break from your responsibilities for more than one day
 Other (please specify)
- e) Being involved:
 Being in a student organization
 Being in a church group
 Being in a fraternity or sorority
 Being on a sports team
 Other type of extracurricular involvement (please specify)
- f) Spending time with people:
 Spending time with family
 Spending time with friends
 Spending time with a romantic partner
 Spending time with a pet or companion animal
 Other (please specify)
- g) Taking action:
 Keeping a planner to manage your time and responsibilities
 Changing your situation for the better (solved a problem, changed major)
 Completing your school work
 Getting ahead on your school work
 Remaining flexible when confronted with challenges
 Improving skills for studying, writing, test taking, etc.
 Improving communication skills
 Improving problem solving skills
 Other (please specify)
- h) Talking to someone:
 Talking with a professional (e.g. counselor, advisor, doctor)
 Talking with family
 Talking with friends
 Getting involved with a support group
 Talked with students who understand my concerns and/or my situations
 Other (please specify)

- i) Staying positive
 - Envisioning how the hard work you are doing will pay off in the future
 - Reflecting on your successes
 - Going to hear motivational speakers
 - Hanging out with positive people
 - Having a good laugh
 - Other (please specify)

DEMOGRAPHIC CHARACTERISTICS

30. Age (fill in)

31. Gender:

- Male
- Female
- Transgender

32. Where do you currently live?

- Campus Residence Hall
- Fraternity or sorority
- Other university housing
- Off-campus with friends/roommates
- Off-campus with parent/guardian
- Off-campus with other family members
- Off-campus by myself
- Other (please specify)

33. What is your current relationship status?

- Single--not in a relationship
- Uncommitted or uncertain dating relationship
- Engaged or committed dating relationship
- Married/domestic partner
- Other (please specify)

34. What is your sexual orientation?

- Heterosexual
- Lesbian
- Gay
- Bisexual
- Queer
- Questioning

35. Are you a person with a disability?

- No
- Yes, and I receive assistance from the Disability Resource Center
- Yes, and I DO NOT receive assistance from the Disability Resource Center

36. Are you an international student?
No
Yes
37. Are you currently a member of the United States Armed Services (Active Duty, Reserve, or National Guard)?
No
Yes, and I **have** been deployed to an area of hazardous duty
Yes, and I **have not** been deployed to an area of hazardous duty
38. Are you a veteran of the United States Armed Services (Active Duty, Reserve, or National Guard)?
No
Yes, and I **have** been deployed to an area of hazardous duty
Yes, and I **have not** been deployed to an area of hazardous duty
39. How do you usually describe yourself (select all that apply)?
American Indian/Alaskan Native
Asian
Black or African American
Hispanic and/or Latino(a)
Native Hawaiian/ Pacific Islander
White or Caucasian (not Hispanic/Latino/a)
Other (please specify)
40. If you identify as Hispanic or Latino(a), how do you usually describe your ancestry or ethnic origin (select all that apply)?
I do not identify as Hispanic or Latino(a)
Mexican, Mexican American or Chicano(a)
Puerto Rican
Cuban
Dominican
Central American
South American
European Spanish
Other (please specify)
41. Where were you born?
In the United States (native)
Outside the United States (foreign born)
42. Did your father or mother, step-father or step-mother attend community college, technical college, or a two-year college?
No
Yes
Unsure (please explain)

43. Did your father or mother, step-father or step-mother graduate from a community college, technical college, or a two-year college?
No
Yes
Unsure (please explain)
44. Did your father or mother, step-father or step-mother attend a four year college or university?
No
Yes
Unsure (please explain)
45. Did your father or mother, step-father or step-mother graduate from a four year college or university?
No
Yes
Unsure (please explain)
46. What is your campus affiliation? (Select all that apply)
Downtown Phoenix
Polytechnic
Tempe
West
Online
Other (please specify)
47. Which of the following best describes your academic level (select one)?
1st year undergraduate
2nd year undergraduate
3rd year undergraduate
4th year undergraduate
5th year or more undergraduate
Other (please specify)
48. Did you attend another college or university before attending ASU?
No, I started ASU as a first time college freshman
Yes, I attended a community college, but did not graduate
Yes, I graduated from a community college
Yes, I attended a technical college
Yes, I graduated from a technical college
Other (please specify)
49. How many credit hours are you currently taking? (fill in)
50. How many credit hours did you complete last semester? (fill in)

51. Within the last 12 months have you (select all that apply):
Withdrawn from a class after drop/add ended?
Received a C grade in a class?
Received a D or lower in a class?
Retaken a course to get a better grade?
Withdrawn from school?
Decided not to return to school the following semester?
Does not apply to me
52. What is your approximate cumulative grade-point average?
4 or higher
3.5 to 3.9
3.0 to 3.4
2.5 to 2.9
2.0 to 2.4
1.9 or lower
53. Over the past 12 months, about how many hours per week did you work at a job during the academic semester?
None
1-9 hours per week
10-19 hours per week
20-29 hours per week
30-39 hours per week
40 hours per week
more than 40 hours per week
54. Over the past 12 months, about how many hours per week did you:
- Answer Options:
None
1-9 hours per week
10-19 hours per week
20-29 hours per week
30-39 hours per week
40 hours per week
more than 40 hours per week
- a) Work at a job during the academic semester?
b) Work as a volunteer or intern during the academic semester (includes community service)?
c) Do school work, such as homework, work on projects, and studying during the academic semester?
d) Provide direct care for dependents or other members of your family during the academic semester?

55. In which of the following ways are you involved in organizations outside the classroom (select all that apply)?

- None
- Member of 1-2 student organizations, not in a leadership role
- Member of 3 or more student organizations, not in a leadership role
- Member and leadership role in 1-2 student organizations
- Member and leadership role in 3 or more student organizations
- Student government, elected office
- Student government, appointed office
- Participated in NCAA athletics
- Participated in Club Sports or Intramural Sports
- Participated in a group affiliated with a religious organization
- Fine arts performance group
- Residence Hall Association
- Canon Leadership Program
- Other (please specify)

56. During the past 12 months, which of the following ASU student services have you used (select all that apply)?

- Academic Advising
- Campus Recreation/Fitness Center
- Career Services
- Cash Course or Money Matters online support through Financial Aid
- Counseling Services
- Disability Resource Center Services
- Health Services
- Learning Support Services
- Multicultural Student Services
- Tutoring
- None of the above
- Other (please specify)

57. In which of the following academic success programs have you participated (select all that apply)?

- None
- ASU 101 - 1 credit
- ASU 101 - 2 or 3 credits
- Summer Bridge (or similar, summer student success program)
- Scholarship program (e.g. Obama, Maroon and Gold, etc.)
- None of the above
- Other (please specify)

58. About what percentage of your school expenses (not including room and board) are being paid:

Answer Options:

None

Between 1-25%

Between 26-50%

Between 51-75%

Between 76-100%

- a) By yourself?
- b) By your family?
- c) Through student loans?
- d) Through scholarships?