

STATS IN BRIEF

U.S. DEPARTMENT OF EDUCATION SEPTEMBER 2011 NCES 2011-163

Military Service Members and Veterans

A Profile of Those Enrolled in Undergraduate and Graduate Education in 2007–08

AUTHOR

Alexandria Walton Radford
MPR Associates, Inc.

PROJECT OFFICER

Thomas Weko
National Center for Education Statistics

Statistics in Brief publications present descriptive data in tabular formats to provide useful information to a broad audience, including members of the general public. They address simple and topical issues and questions. They do not investigate more complex hypotheses, account for inter-relationships among variables, or support causal inferences. We encourage readers who are interested in more complex questions and in-depth analysis to explore other NCES resources, including publications, online data tools, and public- and restricted-use datasets. See nces.ed.gov and references noted in the body of this document for more information.

Under the “new GI Bill,”

the Post-9/11 Veterans Educational Assistance Act of 2008, the U.S. Department of Veterans Affairs provides eligible military service members and veterans increased financial support for postsecondary education, including a housing allowance, a stipend for books and supplies, and full payment of their tuition and fees (U.S. Department of Veterans Affairs 2011b).¹ Before the new law was implemented, veterans enrolled full time in postsecondary education received just \$1,321 per month in Montgomery GI Bill benefits for both living and education expenses (U.S. Department of Veterans Affairs 2008). These changes have generated new interest in military students (Cook and Kim 2009; National Survey of Student Engagement 2010; Steele, Salcedo, and Coley 2010).

This Statistics in Brief draws upon two nationally representative studies of postsecondary students, the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) and the 2004/09 Beginning Postsecondary Students Longitudinal

¹ Under the revised rules beginning August 1, 2011, the U.S. Department of Veterans Affairs pays all tuition and fees for students attending an in-state public school and up to \$17,500 annually for those attending a private or foreign institution (U.S. Department of Veterans Affairs 2011c). If costs exceed that amount, military students may be able to receive additional funding through the Yellow Ribbon program, under which the U.S. Department of Veterans Affairs matches the amount participating institutions elect to contribute toward students' remaining costs (U.S. Department of Veterans Affairs 2011a).

This report was prepared for the National Center for Education Statistics under Contract No. ED-07-CO-0104 with MPR Associates, Inc. Mention of trade names, commercial products, or organizations does not imply endorsement by the U.S. Government.

Study (BPS:04/09),² which were conducted prior to enactment of the new GI Bill. It uses these data about military personnel already enrolled in U.S. postsecondary institutions to provide a context for future data examining the impact of this legislation.

In this report, military students include veterans and military service members on active duty or in the reserves who were pursuing undergraduate or graduate studies.³ For context, military undergraduates were compared with the 45 percent of nonmilitary undergraduates most like them in terms of

age and family responsibilities: nonmilitary undergraduates who were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent).⁴ (Ninety-seven percent of all military undergraduates were independent and thus military undergraduates were studied as a single group and not by dependency status.) Because all graduate students are classified as independent, all military graduate students were compared with all nonmilitary graduate students.

This Statistics in Brief focuses on key demographic and enrollment characteristics because previous analyses have found that military and nonmilitary students often differ on such measures (Radford and Wun 2009).

All comparisons of estimates were tested for statistical significance using the Student's *t*-statistic, and all differences cited are statistically significant at the $p < .05$ level.⁵ From all statistically significant comparisons, this publication discusses a subset that may be of interest to a variety of readers.

² BPS:04/09 data were included in this report in order to present the reasons military and other students gave for selecting their postsecondary institution. NPSAS:08 data do not contain this information. BPS data represent only first-time beginning postsecondary students, whereas NPSAS data represent all undergraduates and graduate students enrolled.

³ First-professional studies and first-professional students are included within graduate studies and graduate students in this report. First-professional degree programs include medicine or osteopathic medicine (M.D. or D.O.), chiropractic (D.C. or D.C.M.), dentistry (D.D.S. or D.M.D.), optometry (O.D.), pharmacy (D.Pharm.), podiatry (Pod.D. or D.P.M.), veterinary medicine (D.V.M.), law (LL.B. or J.D.), and theology (M.Div., M.H.L., or B.D.).

⁴ In 2007–08, 84 percent of all military undergraduates were age 24 or older and 62 percent were married and/or had at least one dependent. Similarly, 86 percent of nonmilitary independent undergraduates were age 24 or older and 67 percent were married and/or had one or more dependents. In contrast, by definition, none of the nonmilitary students classified as dependent had these characteristics (Radford and Wun 2009). For statistics on how military undergraduates compare with nonmilitary dependent undergraduates, see Radford and Wun (2009).

⁵ No adjustments for multiple comparisons were made. The standard errors for the estimates can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

STUDY QUESTIONS

1 How many military service members and veterans were enrolled in undergraduate and graduate education in 2007–08, and what percentage used GI Bill education benefits to pay for their education?

2 How did military undergraduates' and military graduate students' demographic characteristics compare with those of their nonmilitary counterparts'?

3 How did military undergraduates' and nonmilitary independent undergraduates' enrollment characteristics differ?

4 How did military and nonmilitary graduate students' enrollment characteristics differ?

KEY FINDINGS

- In 2007–08, about 4 percent of all undergraduates and about 4 percent of all graduate students were veterans or military service members. About two-fifths of military undergraduates and one-fifth of military graduate students used GI Bill education benefits.
- Unlike their nonmilitary counterparts, a majority of military undergraduates and military graduate students were male. Military students also were more likely than their nonmilitary peers to be married.
- Military undergraduates studied at private nonprofit 4-year institutions, pursued bachelor's degrees, took a distance education course, and studied computer and information sciences more often than their nonmilitary peers. The percentage of military undergraduates who received financial aid (including GI Bill benefits) and the amount they received (including GI Bill benefits) generally exceeded or was not measurably different from those of nonmilitary independent undergraduates.
- A larger percentage of military graduate students than nonmilitary graduate students waited 7 or more years between completing their bachelor's degree and starting graduate school, were enrolled in master's degree programs, attended part time, and took a distance education course.

1

How many military service members and veterans were enrolled in undergraduate and graduate education in 2007–08, and what percentage used GI Bill education benefits to pay for their education?

In 2007–08, approximately 657,000 undergraduates were veterans and another 215,000 were military service members on either active duty or in the reserves (table 1).⁶ Among 2007–08 graduate students, 107,000 were veterans and 38,000 were military service members. To put these numbers in context, military students represented about 4 percent of both the undergraduate and graduate student populations.

Although both veterans and military service members are able to use GI Bill education benefits provided they meet certain conditions (U.S. Department of Veterans Affairs 2010), a minority of military students used those benefits. Specifically, 38 percent of all military undergraduates and 20 percent of all military graduate students received GI Bill education benefits for the 2007–08 academic year.

TABLE 1.

REPRESENTATION

Percentage distribution of undergraduates and graduate students, by military status and receipt of GI Bill education benefits: 2007–08

Military status and receipt of benefits	Undergraduates		Graduate students	
	Percent	Number	Percent	Number
Total	100.0	20,928,000	100.0	3,456,000
Military students				
Veterans	3.1	657,000	3.1	107,000
Military service members				
Active duty	0.7	139,000	0.8	29,000
Reserves	0.4	76,000	0.2	9,000
Nonmilitary students	95.8	20,055,000	95.8	3,312,000
Among military students				
Received GI Bill education benefits for				
2007–08 academic year	37.7	329,000	20.5	29,000
Did not receive GI Bill education benefits for 2007–08 academic year				
	62.3	543,000	79.5	115,000

NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Both dependent and independent students were included in this table. Because 97 percent of all military undergraduates and 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates in other analyses of this report. Because all graduate students (both military and nonmilitary) are classified as independent, all military graduate students were compared with all nonmilitary graduate students throughout this report. Numbers have been rounded to the nearest thousand. Detail may not sum to totals because of rounding. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

⁶ Department of Education results cited here and throughout this report are based on students attending Title IV eligible institutions in the 50 states, the District of Columbia, and Puerto Rico.

2 How did military undergraduates' and military graduate students' demographic characteristics compare with those of their nonmilitary counterparts'?

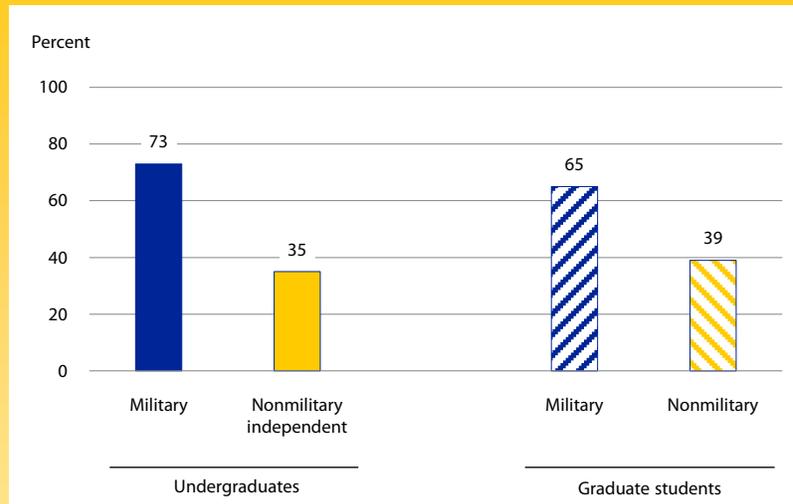
The majority of military students at both the undergraduate and graduate levels were men: 73 percent of all military undergraduates and 65 percent of all military graduate students were male (figure 1). In contrast, men represented the minority among nonmilitary students: 35 percent of nonmilitary independent undergraduates and 39 percent of nonmilitary graduate students were men.

With respect to family obligations, a larger percentage of military undergraduates than nonmilitary independent undergraduates were married (47 percent vs. 37 percent), but a larger percentage of nonmilitary independent undergraduates had a dependent⁷ (55 percent vs. 47 percent) (figure 2). Among military graduate students, 56 percent were married and 58 percent had a dependent. By comparison, 40 percent and 32 percent of nonmilitary graduate students had these respective responsibilities.

FIGURE 1.

GENDER

Percentage of male military and nonmilitary students: 2007–08



NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

⁷ Most dependents are children. A small percentage of dependents are elderly parents or relatives.

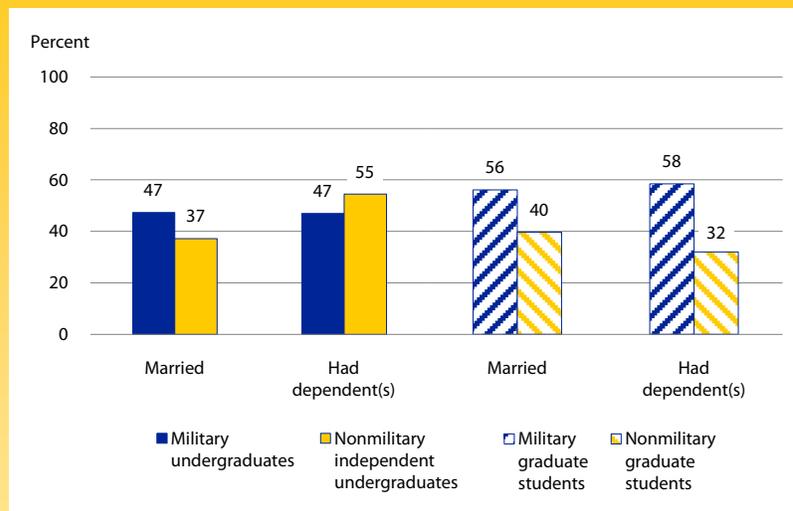
At the graduate level, differences by age and race/ethnicity also occurred. First, proportionately more military students were older; 40 percent were age 40 or older compared with 20 percent of nonmilitary graduate students (figure 3). Military graduate students were also more apt than nonmilitary graduate students to be between 35 and 39 years old and less apt to be between age 25 and 29 or age 24 or younger. (No statistically significant difference could be detected in the percentage of military and nonmilitary graduate students between age 30 and 34.) Also, a larger percentage of military than nonmilitary graduate students were Black or African American (20 percent vs. 11 percent), though a smaller percentage were Asian (3 percent vs. 11 percent). Differences in the percentages of military and nonmilitary graduate students falling into the three other race categories presented in the figure were not statistically significant.

At the undergraduate level, the percentage of military and nonmilitary independent students in any race/ethnicity category differed by 3 percentage points or less. The percentages of military and nonmilitary independent undergraduates who fell in various age categories differed by 6 percentage points (within the age 24 to 29 category) or less (figure 4).⁸

⁸ As throughout this analysis, results at the undergraduate level were based on comparisons between military and nonmilitary independent undergraduates. Comparing military and nonmilitary dependent undergraduates on age and race yields different results (see Radford and Wun 2009).

FIGURE 2.

FAMILY OBLIGATIONS
Percentage of military and nonmilitary students who were married or had a dependent: 2007–08

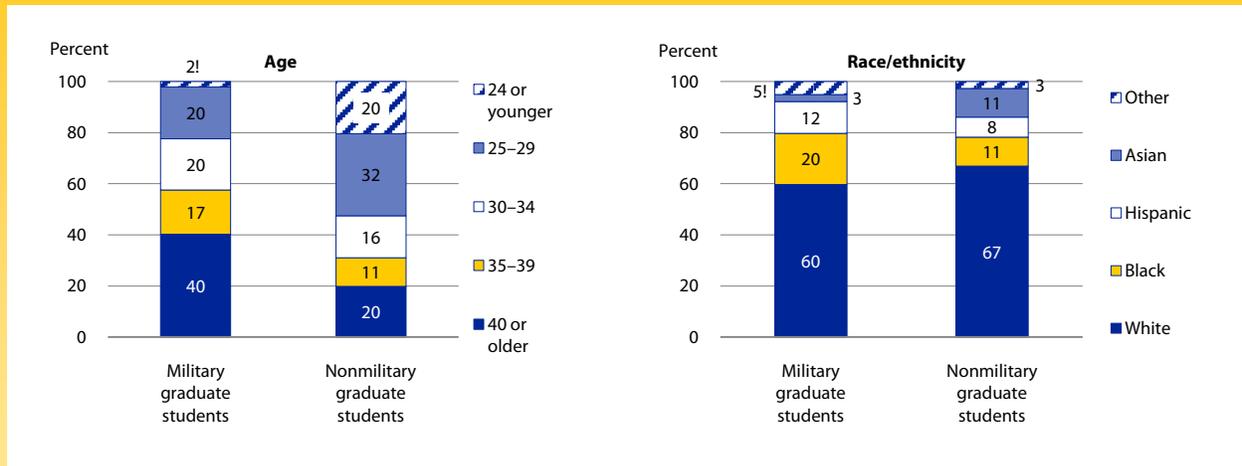


NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

FIGURE 3.

GRADUATE STUDENTS' AGE AND RACE/ETHNICITY
Percentage distributions of military and nonmilitary graduate students, by age and race/ethnicity: 2007–08



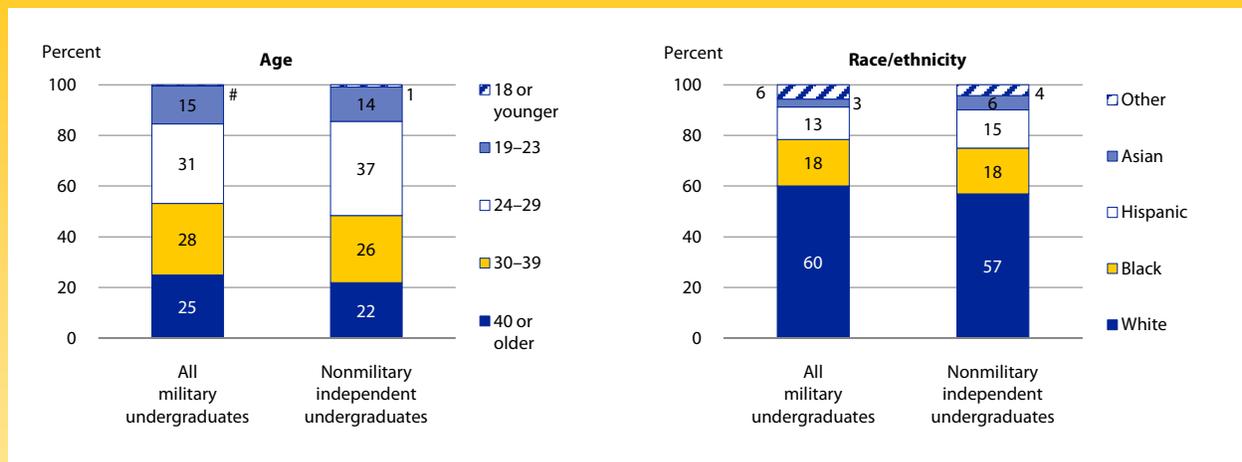
! Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

NOTE: Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander, any other race, and Two or more races. Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Detail may not sum to totals because of rounding. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

FIGURE 4.

UNDERGRADUATES' AGE AND RACE/ETHNICITY
Percentage distributions of military and nonmilitary independent undergraduates, by age and race/ethnicity: 2007–08



Rounds to zero.

NOTE: Black includes African American, Hispanic includes Latino, and Other includes American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander, any other race, and Two or more races. Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. Detail may not sum to totals because of rounding. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

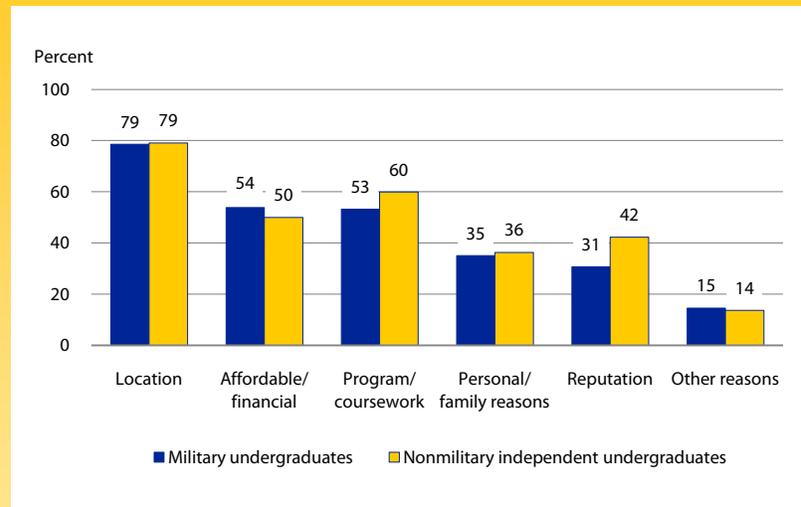
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

3 How did military undergraduates' and nonmilitary independent undergraduates' enrollment characteristics differ?

While the rest of this report uses NPSAS:08 data on all undergraduate and graduate students, presenting the factors that military and nonmilitary independent undergraduates considered in deciding where to enroll requires BPS:04/09 data on 2003–04 first-time beginning undergraduates. Both military and nonmilitary independent students' three most common reasons for selecting their institution were location of institution, affordability, and program of study offered (figure 5). Nevertheless, nonmilitary independent undergraduates were more likely than military undergraduates to indicate that an institution's reputation was influential in their decision-making process (42 percent vs. 31 percent, respectively). Other differences between military and nonmilitary independent undergraduates were not statistically significant.

FIGURE 5.

ENROLLMENT CONSIDERATIONS
Percentage of first-time beginning military and nonmilitary independent undergraduates who reported various reasons for attending their institution: 2003–04

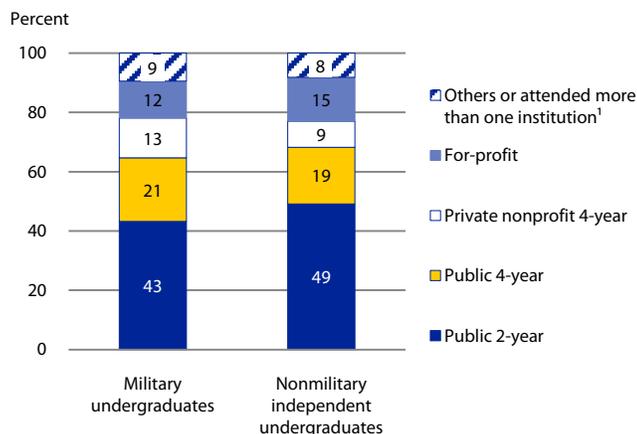


NOTE: Multiple reasons could be given. Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because in NPSAS:08, 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates for this report. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions from the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2004/09 Beginning Postsecondary Students Longitudinal Study (BPS:04/09).

Overall, both military and nonmilitary independent undergraduates were most often enrolled in public 2-year institutions, though military undergraduates attended these institutions at a lower rate (43 percent vs. 49 percent)⁹ (figure 6). Military students were enrolled in private nonprofit 4-year institutions at a higher rate than their nonmilitary peers (13 percent vs. 9 percent) but significant differences between these two groups in the other types of institutions attended and presented in the figure were not detected.

FIGURE 6.

TYPE OF INSTITUTION
Percentage distributions of military and nonmilitary independent undergraduates, by type of institution attended: 2007–08



¹ Other institutions include public less-than-2-year and private not-for-profit 2-year or less.

NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. Detail may not sum to totals because of rounding. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico, and students attending more than one institution. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

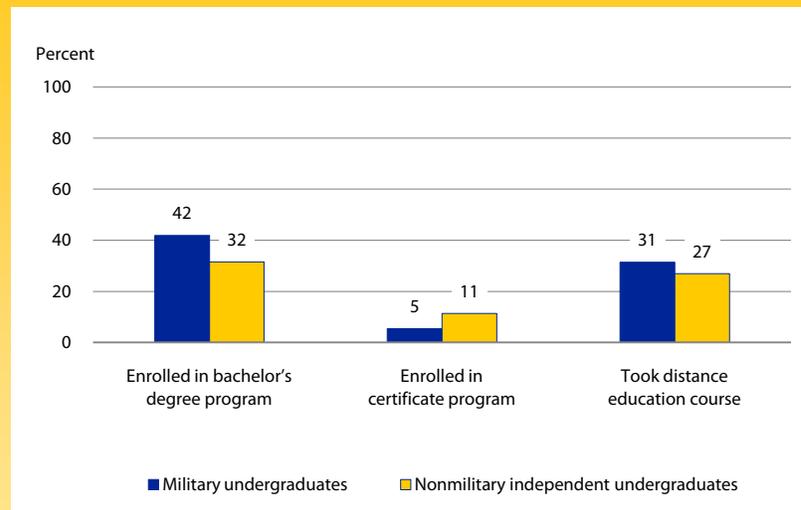
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

⁹ Note that this difference appears not to be statistically significant based on the confidence intervals presented in Radford and Wun (2009), but this difference is statistically significant based on *t*-tests.

An examination of degree programs reveals that compared with nonmilitary independent undergraduates, a larger percentage of military students were enrolled in bachelor's degree programs (42 percent vs. 32 percent) and a smaller percentage were enrolled in certificate programs (5 percent vs. 11 percent) (figure 7). The percentage of military and nonmilitary independent undergraduates in an associate's degree program did not differ significantly at 47 percent and 49 percent, respectively, and the percentage not in a degree program differed by less than 3 percentage points (6 percent and 9 percent, respectively) (Radford and Wun 2009). A separate analysis of classes taken indicates that military undergraduates took a distance education course more often than their nonmilitary peers (31 percent vs. 27 percent).

FIGURE 7.

ENROLLMENT CHARACTERISTICS
Percentage of military and nonmilitary independent undergraduates, by selected enrollment characteristics: 2007–08



NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico, and students attending more than one institution. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

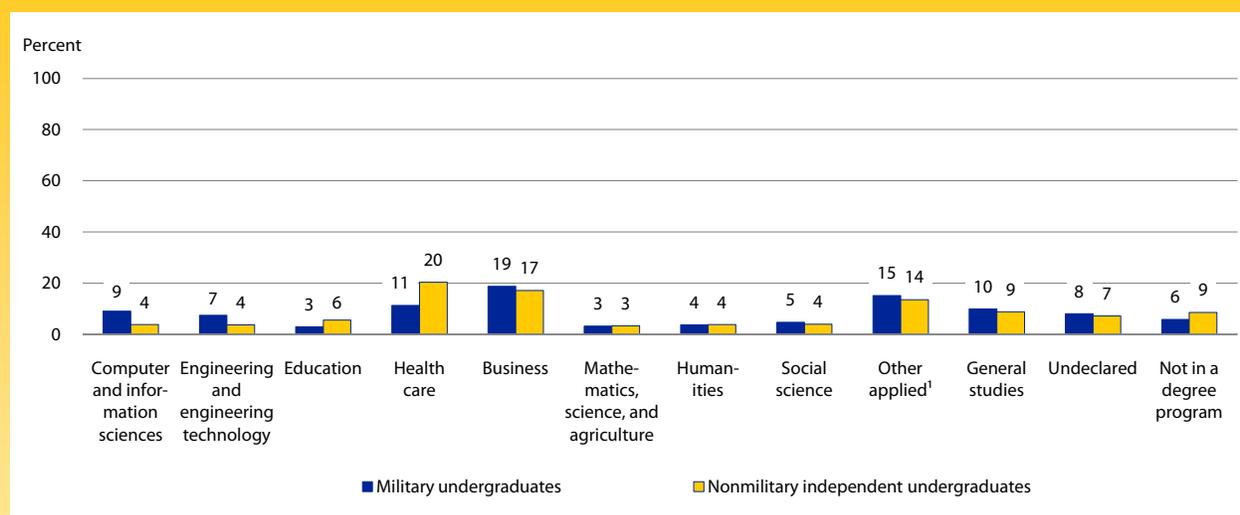
Focusing first on statistically significant differences, military undergraduates pursued two fields of study at higher rates than their nonmilitary independent classmates: computer and information sciences (9 percent vs. 4 percent) and engineering and engineering technology (7 percent vs. 4 percent) and engineering and engineering technology (7 percent vs. 4 percent).

4 percent) (figure 8). Military undergraduates studied two other fields, however, at lower rates than nonmilitary independent undergraduates: education (3 percent vs. 6 percent) and health care (11 percent vs. 20 percent). While a smaller percentage of military undergraduates than nonmilitary independent

undergraduates had no field of study because they were not in a degree program, no statistically significant differences could be detected in the percentage of students undeclared or the percentage of students in the other fields of study for which data were collected and presented in the figure.

FIGURE 8.

FIELD OF STUDY
Percentage of military and nonmilitary independent undergraduates, by selected field of study: 2007–08



¹ Other applied includes fields like architecture, communications, public administration, human services, design, applied arts, law and legal studies, library science, and theology and religious vocations.

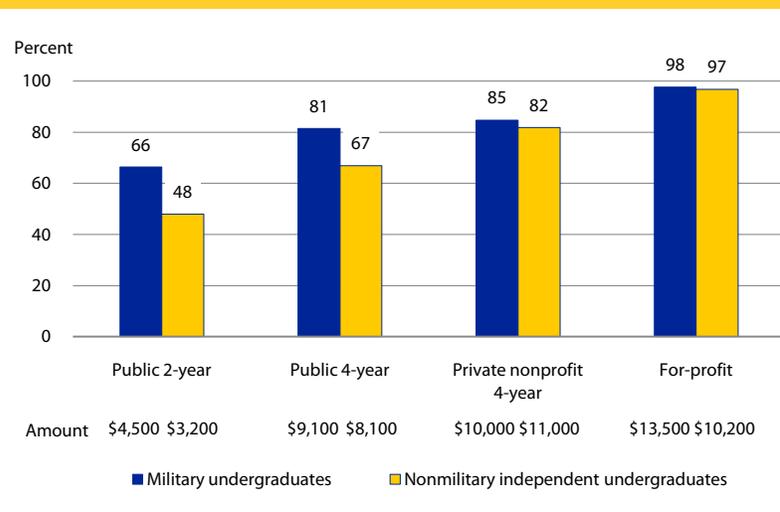
NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

The percentage of military undergraduates receiving financial aid (including GI Bill benefits)¹⁰ and the amount they received (including GI Bill benefits) generally exceeded or was not measurably different from those of nonmilitary independent students. Relatively more military than nonmilitary independent undergraduates received aid at public 2-year (66 percent vs. 48 percent) and public 4-year institutions (81 percent vs. 67 percent) (figure 9). No difference in the percentage receiving aid could be detected between these two student groups at private nonprofit 4-year institutions (85 percent vs. 82 percent) and for-profit institutions (98 percent vs. 97 percent). Among financial aid recipients, military students on average received more than nonmilitary independent students at all institution types except private nonprofit 4-year institutions, where the apparent difference in average amounts (\$10,000 vs. \$11,000) was not statistically significant.¹¹ For more detailed information on the specific types and amounts of financial aid received by military and nonmilitary independent undergraduates, see tables 5-A, 5-B, 5-C, and 5-D in Radford and Wun (2009).

FIGURE 9.

FINANCIAL AID
Percentage of military and nonmilitary independent undergraduates who received financial aid and the average dollar amount received by recipients, by type of institution attended: 2007–08



NOTE: Financial aid includes aid received by students in 2007–08 from any source except parents, relatives, or friends. It includes all grants, loans, work-study, GI Bill education benefits, and any other aid except federal education tax benefits. Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Because 97 percent of all military undergraduates but only 45 percent of all nonmilitary undergraduates were independent (classified for federal aid purposes as financially independent of their parents on the basis of age, marital status, and whether they had a dependent), military undergraduates were compared only with nonmilitary independent undergraduates. This analysis (but only this analysis) excludes the 9 percent of all military undergraduates and the 8 percent of nonmilitary independent undergraduates who attended more than one institution. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>. SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

¹⁰ Financial aid includes aid received by students in 2007–08 from any source except parents, relatives, or friends. It includes all grants, loans, work-study, GI Bill education benefits, and any other aid except federal education tax benefits.

¹¹ These aid results are generally consistent with recent GAO findings (Ashby 2002; Scott 2008).

4 How did military and nonmilitary graduate students' enrollment characteristics differ?

Military graduate students tended to wait longer to enroll in graduate school than nonmilitary graduate students. Eleven percent of military students matriculated less than a year after receiving a bachelor's degree, while 40 percent waited 7 or more years (figure 10). Among nonmilitary graduate students, those percentages were 19 percent and 30 percent, respectively.

Military students' graduate degree programs also differed from their counterparts'. Compared with their nonmilitary peers, military graduate students pursued master's degrees at a higher rate (77 percent vs. 65 percent) and doctoral degrees at a lower rate (9 percent vs. 15 percent).

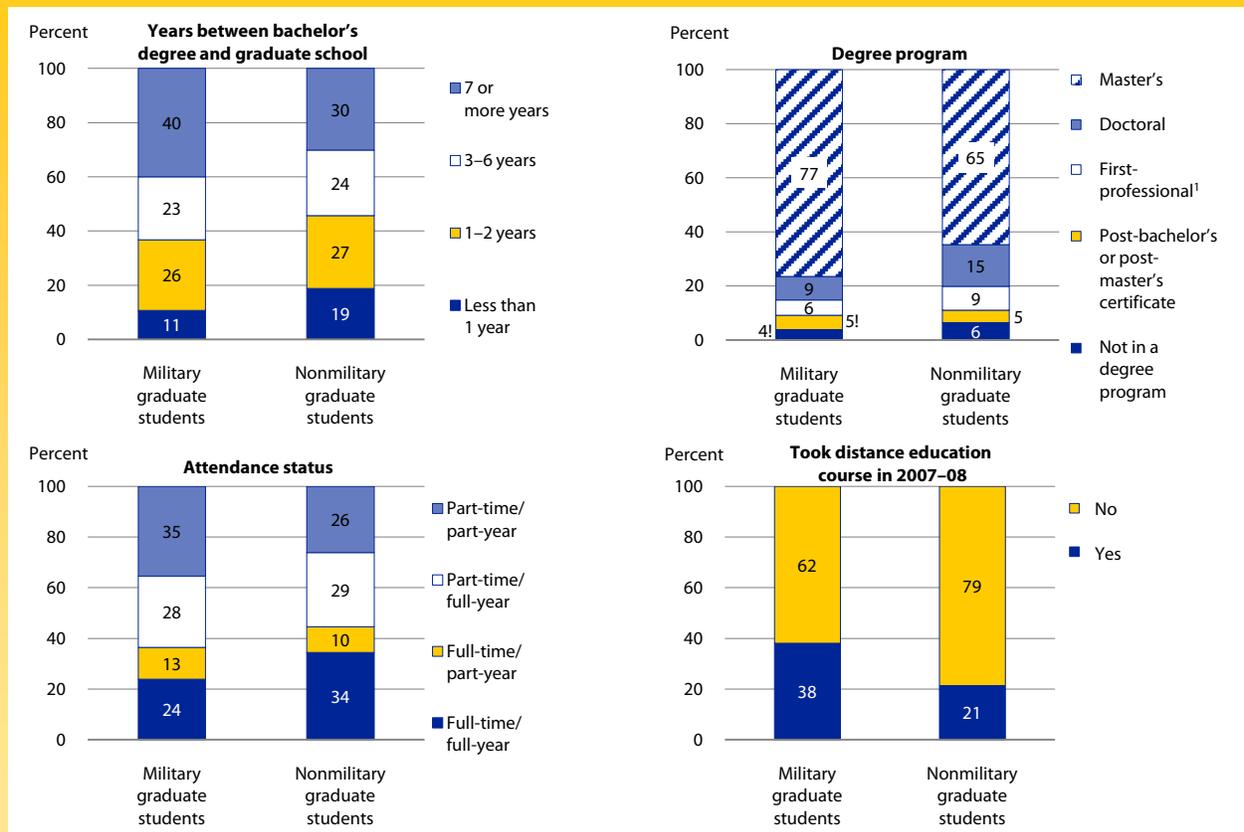
Attendance status and coursetaking varied by military status as well. Relatively fewer military than nonmilitary graduate students took classes full time for the full year (24 percent vs. 34 percent), and relatively more took classes part time for part of the year (35 percent vs. 26 percent).

Military graduate students also enrolled in a distance education course more often than nonmilitary graduate students (38 percent vs. 21 percent).

FIGURE 10.

ENROLLMENT CHARACTERISTICS

Percentage distribution of military and nonmilitary graduate students' selected enrollment characteristics: 2007–08



¹ Interpret data with caution. Estimate is unstable because the standard error represents more than 30 percent of the estimate.

¹ First-professional degree programs include medicine or osteopathic medicine (M.D. or D.O.), chiropractic (D.C. or D.C.M.), dentistry (D.D.S. or D.M.D.), optometry (O.D.), pharmacy (D.Pharm.), podiatry (Pod.D. or D.P.M.), veterinary medicine (D.V.M.), law (LL.B. or J.D.), and theology (M.Div., M.H.L., or B.D.).

NOTE: Students were considered to be military students if they were veterans or military service members on active duty or in the reserves. Detail may not sum to totals because of rounding. Estimates are based on data from students enrolled in Title IV eligible postsecondary institutions in the 50 states, the District of Columbia, and Puerto Rico, and students enrolled in more than one institution. Standard error tables are available at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

FIND OUT MORE

For questions about content or to order additional copies of this Statistics in Brief or view this report online, go to:

<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>

More detailed information on 2007–08 undergraduates and graduate students enrolled in U.S. postsecondary institutions can be found in Web Tables produced by the National Center for Education Statistics (NCES) using the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) data. These Web Tables are a comprehensive source of information on students enrolled in postsecondary education during the 2007–08 academic year. The tables include estimates of demographic, enrollment, and employment characteristics. Web Tables documenting how students pay for their undergraduate education are also available.

Web Tables—Profile of Undergraduate Students: 2007–08 (NCES 2010-205).
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010205>

Web Tables—Profile of Students in Graduate and First-Professional Education: 2007–08 (NCES 2010-177).
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010177>

Readers may also be interested in the following NCES products related to the topic of this Statistics in Brief:

Issue Tables: A Profile of Military Servicemembers and Veterans in Postsecondary Education in 2007–08 (NCES 2009-182). <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009182>

Issue Tables: Choosing a Postsecondary Institution: Considerations Reported by Students (NCES 2009-186).
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009186>

Web Tables—Undergraduate Financial Aid Estimates by Type of Institution in 2007–08 (NCES 2009-201).
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009201>

2007–08 National Postsecondary Student Aid Study (NPSAS:08): Student Financial Aid Estimates for 2007–08: First Look (NCES 2009-166).
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009166>

Persistence and Attainment of 2003–04 Beginning Postsecondary Students: After Three Years: First Look (NCES 2007-169).
<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2007169>

TECHNICAL NOTES

Survey Methodology

The estimates provided in this Statistics in Brief are based on data collected through the 2007–08 National Postsecondary Student Aid Study (NPSAS:08) and the 2004/09 Beginning Postsecondary Students Longitudinal Study (BPS:04/09).

NPSAS covers broad topics concerning student enrollment in postsecondary education and how students and their families finance their education. In 2008, students provided data through instruments administered over the Internet or by telephone. In addition to student responses, data were collected from the institutions that sampled students attended and other relevant databases, including U.S. Department of Education records on student loan and grant programs and student financial aid applications.

NPSAS:08 is the seventh administration of NPSAS, which has been conducted every 3 to 4 years since 1986–87. The NPSAS:08 target population includes students enrolled in Title IV postsecondary institutions in the United States and Puerto Rico at any time between July 1, 2007, and June 30, 2008.¹² This population included about 21 million

¹² The target population of students was limited to those enrolled in an academic program, at least one course for credit that could be applied toward an academic degree, or an occupational or vocational program requiring at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award. The target population excluded students who were also enrolled in high school or a high school completion (e.g., GED preparation) program. “Title IV institutions” refers to institutions eligible to participate in federal financial aid programs under Title IV of the Higher Education Act.

undergraduates and 3 million graduate students enrolled in more than 6,000 institutions.

The institution sampling frame for NPSAS:08 was constructed from the 2004–05 and 2005–06 Institutional Characteristics, Fall Enrollment, and Completions files of the Integrated Postsecondary Education Data System (IPEDS). The sampling design consisted of first selecting eligible institutions, then selecting students from these institutions. Institutions were selected with probabilities proportional to a composite measure of size based on expected 2007–08 enrollment. With approximately 1,700 institutions participating in the study, the weighted institution unit response rate was 90 percent. Eligible sampled students were defined as study respondents if at least 11 key data elements were available from any data source.

Approximately 114,000 undergraduates and 14,000 graduate students were study respondents, and the weighted student unit response rates for both levels were 96 percent. Estimates were weighted to adjust for the unequal probability of selection into the sample and for nonresponse.

BPS follows cohorts of students who enroll in postsecondary education for the first time and covers broad topics concerning student persistence in and completion of postsecondary education and transitions to employment. In 2004, students provided data through instruments administered over the Internet or by telephone. In addition to

student responses, data were collected from the institutions that sampled students attended and other relevant databases, including U.S. Department of Education records on student loan and grant programs and student financial aid applications.

BPS:04/09 is a subset of first-time beginning (FTB) students from the 2003–04 National Postsecondary Student Aid Study (NPSAS:04), whose target population included all students enrolled in Title IV postsecondary institutions in the United States and Puerto Rico at any time between July 1, 2003, and June 30, 2004.¹³ This population included about 19 million undergraduates and 3 million graduate students enrolled in more than 6,000 institutions.

BPS:04/09 used the institution sampling frame from NPSAS:04, which was constructed from the 2000–01 and 2001–02 Institutional Characteristics, Fall Enrollment, and Completions files of IPEDS. The sampling design consisted of first selecting eligible institutions, then selecting students from these institutions. Institutions were selected with probabilities proportional to a composite measure of size based on expected 2003–04

¹³ The target population of students was limited to those enrolled in an academic program, at least one course for credit that could be applied toward an academic degree, or an occupational or vocational program requiring at least 3 months or 300 clock hours of instruction to receive a degree, certificate, or other formal award. The target population excluded students who were also enrolled in high school or a high school completion (e.g., GED preparation) program. “Title IV institutions” refers to institutions eligible to participate in federal financial aid programs under Title IV of the Higher Education Act.

enrollment. With approximately 1,400 institutions participating in the study, the weighted institution unit response rate was 80 percent. BPS:04/09 eligible sampled students were defined as study respondents if they were both eligible to participate in NPSAS:04 and FTB students at NPSAS sampled institutions during the 2003–04 academic year. Approximately 18,600 students eligible for BPS:04/09 were sampled from NPSAS:04 participants and from a small number of NPSAS:04 nonrespondents. The unweighted student response rate was 80 percent and the weighted response rate was 77 percent. Estimates were weighted to adjust for the unequal probability of selection into the sample and for non-response.

Two broad categories of error occur in estimates generated from surveys: sampling and nonsampling errors. Sampling errors occur when observations are based on samples rather than on entire populations. The standard error of a sample statistic is a measure of the variation due to sampling and indicates the precision of the statistic. The complex sampling design used in NPSAS:04 for BPS:04/09 and in NPSAS:08 must be taken into account when calculating variance estimates such as standard errors. NCES’s online PowerStats, which generated the estimates in this report, use the balanced repeated replication (BRR) and Jack-knife II (JK2) methods to adjust variance estimation for the complex sample design.

VARIABLES USED

All estimates presented in this Statistics in Brief were produced using PowerStats, a web-based software application that allows users to generate tables for many of the postsecondary surveys conducted by NCES. See “Run Your Own Analysis With DataLab” below for more information on PowerStats. The variables used in this Brief are listed below. Visit the NCES DataLab website (<http://nces.ed.gov/datalab>) to view detailed information on how these variables were constructed and their sources. Under *Detailed Information About PowerStats Variables*, click *by subject* or *by variable name* below the *NPSAS Undergraduates: 2008* or *Beginning Postsecondary Students: 2004/2009* headings. The program files that generated the statistics presented in this Brief can be found at <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011163>.

Label	Name
2007–08 National Postsecondary Student Aid Study (NPSAS:08) Variables	
Age	AGE
Attendance status	ATTNSTAT
Dependency	DEPEND
Dependents	DEPANY
Field of study	MAJORS4Y
Financial aid	TOTAID
Gender	GENDER
Graduate degree program	GRADDEG
Institution type	SECTOR4
Marital status	SMARITAL
Military status	MILTYPE
Race/ethnicity	RACE
Received GI Bill education benefits	VETBEN
Took distance education course in 2007–08	DISTEDUC
Undergraduate degree program	UGDEG
Years between bachelor’s degree and graduate school entry	GRADGAP
2004/09 Beginning Postsecondary Students Longitudinal Study (BPS:04/09) Variables	
BPS:04/06/09 panel weight	WTB000
Dependency	DEPEND
Military status	MILTYPE
Reason for enrolling: affordable/financial	RAD04C
Reason for enrolling: location	RAD04D
Reason for enrolling: other reasons	RAD04X
Reason for enrolling: personal/family reasons	RAD04E
Reason for enrolling: program/coursework	RAD04A
Reason for enrolling: reputation	RAD04B

Nonsampling errors can be attributed to several sources: incomplete information about all respondents (e.g., some students or institutions refused to participate, or students participated but answered only certain items); differences among respondents in question interpretation; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

For more information on NPSAS and BPS methodology, see the following reports:

- *2007–08 National Postsecondary Student Aid Study (NPSAS:08) Full-scale Methodology Report* (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2011188>).
- *2004/06 Beginning Postsecondary Students Longitudinal Study (BPS:04/06): Methodology Report* (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2008184>).

Item Response Rates

NCES Statistical Standard 4-4-1 states that “[a]ny survey stage of data collection with a unit or item response rate less than 85 percent must be evaluated for the potential magnitude of nonresponse bias before the data or any analysis using the data may be released” (U.S. Department of Education 2002). This means that nonresponse bias analysis could be required at any of three levels: (a) institutions, (b) study respondents, or (c) items.

For information on response rates and nonresponse bias analysis for BPS, please see the BPS methodology report, listed above. Response rate and nonresponse bias analysis information provided below are for estimates from NPSAS:08.

In NPSAS:08, the institution and study respondent response rates were 90 percent and 96 percent, respectively, and thus nonresponse bias analysis was not required at those levels. The student interview response rate, however, was 71 percent, and therefore nonresponse bias analysis was required for those variables based in whole or in part on student interviews. In this report, four NPSAS:08 variables required nonresponse bias analysis: DEPANY (69 percent), DISTEDUC (63 percent), GRADGAP (70 percent), and TOTAID (60 percent). For each of these variables, nonresponse bias analyses were conducted to determine whether respondents and nonrespondents differed on the following characteristics: institution sector, region, and total enrollment; student type, gender, and age group; whether the student had Free Application for Federal Student Aid (FAFSA) data, was a federal aid recipient, was a Pell Grant recipient, or borrowed a Stafford Loan; and the amount, if any, of a student’s Pell Grant or Stafford Loan. Differences between respondents and nonrespondents on these variables were tested for statistical significance at the 5 percent level.

Nonresponse bias analyses of the variables in this report with response

rates less than 85 percent indicated that respondents differed from nonrespondents on 20 to 82 percent of the characteristics analyzed, indicating that there may be bias in these estimates. Any bias due to nonresponse, however, is based upon responses prior to stochastic imputation. The potential for bias in these estimates is tempered by two factors.

First, potential bias may have been reduced due to imputation. Because imputation procedures are designed specifically to identify donors with similar characteristics to those with missing data, the imputation is assumed to reduce bias. While item-level bias before imputation is measurable, such bias after imputation is not, so whether the imputation affected the bias cannot be directly evaluated. Therefore, the item estimates before and after imputation were compared to determine whether the imputation changed the biased estimate, thus suggesting a reduction in bias.

For continuous variables, the difference between the mean before imputation and the mean after imputation was estimated. For categorical variables, the estimated difference was computed for each of the categories as the percentage of students in that category before imputation minus the percentage of students in that category after imputation. These estimated differences were tested for statistical significance at the 5 percent level. A significant difference in the item means after imputation implies a re-

duction in bias due to imputation. A nonsignificant difference suggests that imputation may not have reduced bias, that the sample size was too small to detect a significant difference, or that there was little bias to be reduced.

Second, for some composite variables, the components of the variables from which the composites are constructed often constitute a very small proportion of the total variable, attenuating the potential bias introduced by non-response. For example, most of the components of TOTAID (total amount of all financial aid received) were obtained from federal databases and institutional records and have very high response rates. Some components of TOTAID, however, are types of financial aid that are often disbursed directly to students and not through institutions (e.g., employer aid and private loans). Because the primary source of information about such types of aid is the student interview, these variables were missing for interview nonrespondents.

In the case of missing information from the student interview, values were stochastically imputed and the imputed values used to construct the composite variables. In the example cited above, both employer aid and private loans were received by relatively few students and were small components of the total. For example, 52 percent of all undergraduates received any grants (TOTGRT), a primary component of TOTAID, and the average among all undergraduates was \$2,500. In com-

parison, 8 percent received any employer aid (EMPLYAM3), with an average among all undergraduates of \$200. Therefore, despite the low response rates of these components, any bias they contribute is likely to be minimal.

For more detailed information on non-response bias analysis and an overview of the survey methodology for NPSAS:08, see appendix B of the report *2007–08 National Postsecondary Student Aid Study (NPSAS:08): Student Financial Aid Estimates for 2007–08: First Look* (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2009166>).

Statistical Procedures

Comparisons of means and proportions were tested using Student's t statistic. Differences between estimates were tested against the probability of a Type I error¹⁴ or significance level. The statistical significance of each comparison was determined by calculating the Student's t value for the difference between each pair of means or proportions and comparing the t value with published tables of significance levels for two-tailed hypothesis testing. Student's t values were computed to test differences between independent estimates using the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}}$$

¹⁴ A Type I error occurs when one concludes that a difference observed in a sample reflects a true difference in the population from which the sample was drawn, when no such difference is present.

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large t statistics may appear to merit special attention. This can be misleading since the magnitude of the t statistic is related not only to the observed differences in means or percentages but also to the number of respondents in the specific categories used for comparison. Hence, a small difference compared across a large number of respondents would produce a large (and thus possibly statistically significant) t statistic.

A second hazard in reporting statistical tests is the possibility that one can report a "false positive" or Type I error. Statistical tests are designed to limit the risk of this type of error using a value denoted by alpha. The alpha level of .05 was selected for findings in this report and ensures that a difference of a certain magnitude or larger would be produced when there was no actual difference between the quantities in the underlying population no more than 1 time out of 20.¹⁵ When analysts test hypotheses that show alpha values at the .05 level or smaller, they reject the null hypothesis that there is no difference between the two quantities. Failing to reject a null hypothesis, i.e., detect a difference, however, does not imply the values are the same or equivalent.

¹⁵ No adjustments were made for multiple comparisons.

REFERENCES

- Ashby, C.M. (2002). *Veterans' Education Benefits: Comparison of Federal Assistance Awarded to Veteran and Nonveteran Students* (GAO-02-368). Report to the Ranking Minority Member, Committee on Veteran's Affairs, U.S. Senate. Washington, DC: U.S. General Accounting Office.
- Cook, B.J., and Kim, Y. (2009). *From Soldier to Student: Easing the Transition of Service Members on Campus*. Washington, DC: American Council on Education. Retrieved January 31, 2011, from <http://www.acenet.edu/AM/Template.cfm?Section=Home&CONTENTID=33233&TEMPLATE=/CM/ContentDisplay.cfm>.
- National Survey of Student Engagement. (2010). *Major Differences: Examining Student Engagement by Field of Study—Annual Results 2010*. Bloomington, IN: Indiana University Center for Postsecondary Research.
- Radford, A.W., and Wun, J. (2009). *Issue Tables: A Profile of Military Servicemembers and Veterans in Postsecondary Education in 2007–08* (NCES 2009-182). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.
- Scott, G.A. (2008). *Higher Education: Veteran Students Received Similar Amounts of Title IV Aid as Nonveterans but More Total Aid With GI Benefits* (GAO-08-741). Report to the Ranking Member, Subcommittee on Economic Opportunity, Committee on Veterans' Affairs, House of Representatives. Washington, DC: U.S. Government Accountability Office.
- Steele, J.L., Salcedo, N., and Coley, J. (2010). *Military Veterans' Experiences Using the Post-9/11 GI Bill and Pursuing Postsecondary Education*. Washington, DC: American Council on Education and RAND Corporation. Retrieved January 31, 2011, from [http://www.acenet.edu/AM/Template.cfm?Section=Publications and Products&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=39233](http://www.acenet.edu/AM/Template.cfm?Section=Publications_and_Products&TEMPLATE=/CM/ContentDisplay.cfm&CONTENTID=39233).
- U.S. Department of Education, National Center for Education Statistics. (2002). *NCES Statistical Standards* (NCES 2003-601). Washington, DC.
- U.S. Department of Veterans Affairs. (2008). *Montgomery GI Bill Active Duty (Chapter 30) Increased Educational Assistance Allowance Effective August 1, 2008*. Retrieved February 24, 2010, from http://www.gibill.va.gov/GI_Bill_Info/rates/CH30/ch30rates080108.htm.
- U.S. Department of Veterans Affairs. (2010). *Montgomery GI Bill*. Retrieved April 8, 2010, from <http://www.gibill.va.gov/post-911/montgomery-gi-bill/>.
- U.S. Department of Veterans Affairs. (2011a). *Benefits of the Yellow Ribbon Program*. Retrieved May 2, 2011, from <http://www.gibill.va.gov/post-911/post-911-gi-bill-summary/yellow-ribbon-program.html>.
- U.S. Department of Veterans Affairs. (2011b). *The Post-9/11 GI-Bill*. Retrieved May 2, 2011, from <http://www.gibill.va.gov/post-911/post-911-gi-bill-summary/>.
- U.S. Department of Veterans Affairs. (2011c). *Upcoming Changes to the Post-9/11 GI-Bill*. Retrieved May 2, 2011, from http://www.gibill.va.gov/benefits/post_911_gibill/Post911_changes.html.

RUN YOUR OWN ANALYSIS WITH DATALAB

You can replicate or expand upon the figures and tables in this report, or even create your own. DataLab has several different tools that allow you to customize and generate output from a variety of different survey datasets. Visit DataLab at:

<http://nces.ed.gov/datalab/>

The screenshot shows the DataLab website interface. At the top, there is a header with the word "DATALAB". Below the header, there are three main sections:

- QuickStats:** Features a logo and a list of bullet points: "Create a simple table quickly", "View your output as a chart or table", "Choose from many datasets each with about one hundred variables", and "Select from recent postsecondary studies". A "GO" button is at the bottom right.
- PowerStats:** Features a logo with numbers and a list of bullet points: "Produce complex tables", "Run linear and logistic regressions", "Choose from many datasets each with thousands of variables", and "Select from all postsecondary studies". A "GO" button is at the bottom right.
- What's New?:** Features a yellow exclamation mark icon. The text reads: "07/26/2011 Weight selection changed". Below this, there are two numbered points: "1. For datasets that require a weight selection, you will now be asked to choose a weight immediately before running your table or regression instead of picking it when you choose a dataset." and "2. NPSAS 2000 no longer requires a weight selection. PowerStats".

Below these sections, there is a large section titled "Detailed Information About PowerStats Variables". This section is organized into two columns of study information:

- Left Column:**
 - Baccalaureate and Beyond Longitudinal Study, B&B: 2008/2009**
 - by subject (2.1 MB, PDF)
 - by variable name (1.7 MB, PDF)
 - Baccalaureate and Beyond Longitudinal Study, B&B: 1993/2003**
 - by subject (2.2 MB, PDF)
 - by variable name (1.8 MB, PDF)
 - Baccalaureate and Beyond Longitudinal Study, B&B: 2000/2001**
 - by subject (4 MB, PDF)
 - by variable name (4.1 MB, PDF)
 - Beginning Postsecondary Students, BPS: 2004/2009**
 - by subject (2.7 MB, PDF)
 - by variable name (2 MB, PDF)
 - Beginning Postsecondary Students, BPS: 1996/2001**
 - by subject (3.1 MB, PDF)
 - by variable name (3.1 MB PDF)
 - National Study of Postsecondary Faculty, NSOPF: 2004**
 - Faculty
 - by subject (1.2 MB, PDF)
 - by variable name (926 KB, PDF)
 - Institution
 - by subject (543 KB, PDF)
 - by variable name (471 KB, PDF)
- Right Column:**
 - National Postsecondary Student Aid Study, NPSAS: 2008**
 - Undergraduates
 - by subject (1.5 MB, PDF)
 - by variable name (1.1 MB, PDF)
 - Graduate and Professional
 - by subject (1 MB, PDF)
 - by variable name (748 KB, PDF)
 - National Postsecondary Student Aid Study, NPSAS: 2004**
 - Undergraduates
 - by subject (1.3 MB, PDF)
 - by variable name (0.98 MB, PDF)
 - Graduate and Professional
 - by subject (1.1 MB, PDF)
 - by variable name (787 KB, PDF)
 - National Postsecondary Student Aid Study, NPSAS: 2000**
 - Undergraduates
 - by subject (2.2 MB, PDF)
 - by variable name (1.8 MB, PDF)
 - Graduate and Professional
 - by subject (1.7 MB, PDF)
 - by variable name (1.4 MB, PDF)

At the bottom right of the interface, there is a "Help" section with a yellow question mark icon. The text reads: "Need help? Contact: powerstats@ed.gov". Below this, it says: "Need access to restricted data? Learn more in the [Restricted-Use Data Procedures Manual](#)."