

Attributes Associated with Postdoctoral Fellows and Views of Immigration: A Preliminary Analysis Using the General Social Survey

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Abstract

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Recommended Citation

Jach, E., & Gloeckner, G. (2020). Attributes associated with postdoctoral fellows and views of immigration: A preliminary analysis using the General Social Survey. *Journal of Critical Thought and Praxis* 9(1), Article 5. <https://doi.org/10.31274/jctp.9571>.

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**Attributes Associated with Postdoctoral Fellows and Views of Immigration:
A Preliminary Analysis Using the General Social Survey**

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While research on supporting undocumented immigrants and undocumented students within higher education has examined the opinions of students, faculty, and staff, there is a gap in the literature when it comes to postdoctoral fellows. This study used data from the 2014 General Social Survey (Smith et al., 2018) to examine whether respondents' attributes, including holding a possible postdoctoral position, predicted views of "illegal" immigration, and whether immigrants should have the same education as Americans. Findings suggest that a combination of respondents' attributes predicted these views. Results also suggest that the odds of being more supportive of undocumented immigrants were higher for minorities and for non-U.S. citizens. In addition, being a non-U.S. citizen and having a graduate degree each increased the odds that respondents would support immigrant education. This study contributes to the literature on understanding attitudes toward immigration by conducting a preliminary analysis on the views of an overlooked group within the academy: postdoctoral fellows.

Keywords: Undocumented immigrants | higher education | postdoctoral fellow

Given the current political climate in the United States that perpetuates negative rhetoric against immigrants, examining how individuals view undocumented immigration and education for immigrants is significant. The term undocumented refers to an individual in the United States who does not currently have legal status; this condition may be due to having overstayed a temporary legal status or having arrived without legal status. Research has delineated the negative climate encountered by undocumented immigrants and undocumented students in the United States and within higher education (Bjorklund, 2018; Davidson & Burson, 2017; Muñoz, 2015, 2016; Suarez-Orozco et al., 2015). Literature has also examined the opinions of a variety of groups found within the academy and their views on immigration as well as their views of undocumented students' pursuit of higher education. This research has considered the opinions of undergraduate students (Garibay et al., 2016; Herrera et al., 2013), as well as employees comprising institutions of higher education, including: campus leaders (Feranchak, 2007; Parrish, 2015), staff (Cadenas et al., 2016; Cisneros & Cadenas, 2017; Nienhuser, 2018),

community college leaders (Nienhuser, 2014), and faculty members (Ishiwata & Muñoz, 2018; Salas, 2012). There is a gap in the literature when it comes to considering the opinions of postdoctoral fellows regarding immigration. This gap mirrors the broader problem of failing to examine postdoctoral fellows as a group of study within the literature on higher education.

A variety of individual attributes have been shown to be associated with greater support of undocumented immigrants and undocumented students, and these factors may constitute those of postdoctoral fellows. The attributes associated with greater support of undocumented immigrants and undocumented students are also those that may often characterize postdoctoral fellows within higher education; as the National Postdoctoral Association (Ferguson et al., 2014) and recent research (Xu et al., 2018) have suggested, postdoctoral fellows are comprised of more women than men and more than half are from outside the United States. When it comes to research on attitudes toward undocumented students, being of a racial/ethnic minority (vs. White), being a woman (vs. a man), and being a non-native speaker of English (vs. a native speaker of English) (Garibay et al., 2016) have all been associated with more supportive views. In addition, being a woman has also decreased the odds of disapproving of undocumented immigration (Berg, 2009). Endorsing the belief that immigrants support the economy and supporting bilingual education have also been associated with more supportive views (Palmer & Davidson, 2011). Having attained a terminal doctorate in their field of study, postdoctoral fellows constitute the highest level of formal training within the academy. Having higher levels of education (such as a graduate degree) has also been associated with more supportive views of undocumented immigration (Berg, 2009; Kunovich, 2013).

The experiences of postdoctoral fellows may also align with experiences that have been shown to be associated with more supportive views toward undocumented immigrants and/or undocumented students, as delineated by a variety of researchers (Berg, 2009; Caicedo, 2016; Feranchak, 2007; Garibay et al., 2016; Herrera et al., 2013). Given their many years of postsecondary training, postdoctoral fellows may have had an experience associated with exhibiting greater support, such as attending an institution receiving federal aid (Garibay et al., 2016), living in a more urban environment (Caicedo, 2016), living in an area with a higher Latino population (Berg, 2009), living in a state that has policies permitting in-state tuition for undocumented students (Feranchak, 2007), or having experiences with positive cross-racial interactions (Herrera et al., 2013). Older age has been shown to have increased the odds of disapproving of undocumented immigration (Berg, 2009). Although the attributes and experiences constituting those of many postdoctoral fellows may be associated with greater support of undocumented immigrants, there is a gap in the literature examining the views of postdoctoral fellows on this topic. This gap mirrors the reality that higher education as a field seldom examines postdoctoral fellows as a group within the academy. Furthermore, this gap is problematic; with more than half of postdocs being from outside the U.S., this group is uniquely situated to view immigration in a different light than others within higher education.

It can certainly be difficult to examine postdoctoral fellows as a monolithic group because of the diversity of settings and types of work in which they are employed. However, the failure of previous research to examine how postdoctoral fellows view undocumented immigrants is problematic because factors found to be associated with greater support of undocumented immigrants and undocumented students' pursuit of higher education are the characteristics and

attributes that are likely to comprise those of many postdoctoral fellows. The paucity of research examining postdoctoral fellows as a group within higher education overlooks the reality that postdoctoral fellowships constitute the final transition from extensive training in the academy to the workforce. The lack of research examining this transition is notable given the tendency for higher education to extensively examine the numerous other transitions within the academic pipeline: first-year experiences, transfer student transitions, graduate student experiences, and career preparation.

The present study used data from the General Social Survey (Smith et al., 2018) to examine attributes potentially associated with views of immigration, including those related to attributes associated with those of postdoctoral fellows. Specifically, this study conducted a preliminary analysis on whether a combination of respondents' attributes, including holding a possible postdoctoral position, predicted views of "illegal" immigration, and whether immigrants should have the same education as Americans.

Review of Literature

Previous literature has examined majority opinions of undocumented immigrants, majority opinions within the academy of undocumented students' pursuit of higher education, and the experiences of postdoctoral fellows. This study is informed by these previous bodies of work. The analysis in this study addresses the gap in the literature regarding postdoctoral fellows' views of immigration using a large, publicly available data set, the GSS (Smith et al., 2018), to conduct preliminary analyses to consider postdoctoral fellows as a group.

Attitudes toward Undocumented Immigrants

Previous research on attitudes toward undocumented immigrants has considered personal viewpoints and ideology. Negative attitudes toward undocumented immigrants, such as rhetoric indicating people should go back to where they came from, have been found to be associated with endorsement of stereotypes about "illegal" immigrants, a humanitarian-egalitarian value system, and negative attitudes about legally present Mexican Americans (Cowan, Martinez, & Mendiola, 1997). As posited by Negrón-Gonzales (2013), the term "illegal" frames immigrants as criminals, functioning as a means of dehumanizing others. Thus Cowan, Martinez, and Mendiola's (1997) employment of "illegals" (as opposed to legal) demonstrated how study participants were able to sufficiently distance themselves from "the other." This othering and dehumanization connect with the historical reality that Whiteness has been legalized as a form of citizenship in the United States (Haney-Lopez, 2006). In addition, Gonzalez (2014) put forth a historical analysis of "cimmigration," or how immigration has been criminalized within the semantics of the national immigration debate. Conservative views informing opinions of undocumented migration have also been analyzed, suggesting that ideology fuels opinions on the issue (Benfell, 2015). Conversely, pro-immigrant sentiment has been found to be associated with cosmopolitanism (Haubert & Fussell, 2006).

More recent research has also considered how ideology and viewpoint inform opinions of undocumented immigrants. Nativism has fueled the standpoint for which those with legal status believe immigrant children should be "kept out" of the United States (Davidson & Burson, 2017). In an analysis of views of college students and community members in the Midwest,

nationalism was significantly related to measures for targeting immigrants, but not for supporting efforts to penalize Americans for employing undocumented individuals (Mukherjee et al., 2012). The analysis also determined that patriotism and nationalism significantly predicted support for apprehending and punishing undocumented immigrants. Mukherjee et al.'s (2012) findings shed light on the bias embedded within the opinions of those with privileged identities, including Whiteness and legal status. Similarly, a study of perceived criminal threat found that political beliefs and education level were the strongest predictors of views of immigration, with conservative ideology, lower levels of education, and lower income levels being associated with more punitive controls of immigration (Stupi et al., 2016).

The literature on attitudes toward undocumented immigrants has also examined aspects of identity. National in-group identification (strong identification as an American) and group narcissism (strong sense of entitlement as Americans) were found to be associated with negative views toward undocumented immigrants (Lyons et al., 2013). In addition, previous research has studied the views of those in the helping professions, including mental health professionals' views (Alfaro & Bui, 2018) and those of social workers in training programs (Held et al., 2018). Samson (2015) also examined Asian American views of undocumented immigrants, finding that perceived political commonality with Blacks was associated with more supportive views of undocumented immigrants, while perceived political commonality with Whites was associated with increased opposition to pathways for undocumented immigrants. These findings underscore the importance of individual factors, such as occupation or race, in examining views toward undocumented immigrants within the United States.

Attitudes toward Undocumented Students' Pursuit of Higher Education

Research has also examined public attitudes toward undocumented students' pursuit of higher education. One study examined symbolic politics and labor market competition and their association with views toward undocumented students' access to higher education (Palmer & Davidson, 2011). Findings suggested that people who reported supporting bilingual education as well as believing that immigrants support the economy were more likely to report supporting undocumented students' access to higher education. Higher family income was also associated with less support of undocumented student access to higher education.

Studies on attitudes toward undocumented students' pursuit of higher education have also examined the views of groups found within the academy, including students and employees. Considering the political rhetoric surrounding undocumented students in the state of Arizona, researchers examined the opinions of Arizona college students and their opinions toward undocumented Mexican immigrants (Diaz et al., 2011). While assessing how urban and suburban students used language to describe undocumented status, Caicedo (2016) found that there were differences between urban and suburban college students. Specifically, urban students reported hearing the term undocumented more often, while their suburban peers reported hearing the terms "alien," "legal," or "illegal" more often. Analyses also suggested that dichotomous legality-centered thinking framed the use of the term "illegal," while circumstantial thinking was associated with the term undocumented. These findings connect to an ethnographic narrative about a community college in North Georgia and the response to undocumented status (Salas, 2012) in that dichotomous thinking has the potential to undermine support for undocumented students.

Research based on cross-sectional surveys of undergraduate students conducted by the Higher Education Research Institute (HERI) at the University of California-Los Angeles has found a variety of factors to be associated with more support for undocumented students' pursuit of higher education. Specifically, certain demographic groups among undergraduate students reported higher levels of support for undocumented students. Using hierarchical linear modeling, racial minorities were more supportive of undocumented immigrants' access to education than Whites, including: Blacks ($b = .121$, S. E. = .039, $p < .01$), Mexican/Chicanos ($b = .357$, S. E. = .028, $p < .001$), other Latinos ($b = .280$, S. E. = .055, $p < .001$), and other races ($b = .106$, S. E. = .047, $p < .05$). Women were more supportive than men ($b = .158$, S. E. = .023, $p < .001$). Native English speakers were less supportive than non-native English speakers ($b = -.156$, S. E. = .038, $p < .001$). Students with a home address in a left-leaning congressional district were more supportive of undocumented immigrants' access to education ($b = .002$, S. E. = .001, $p < .01$). However, having concerns about employment after college was associated with less support for undocumented immigrants' access to education ($b = -.109$, S. E. = .013, $p < .001$). Attending an institution of higher education receiving federal aid was associated with more support ($b = .003$, S. E. = .001, $p < .05$). Finally, students from states with an in-state tuition policy for undocumented students reported more support ($b = .082$, S. E. = .034, $p < .05$). A separate analysis (Herrera et al., 2013) suggested that experiences associated with supporting undocumented immigrants' access to education included taking an ethnic studies course ($b = .03$, S. E. = .01, $p < .05$), participating in a cultural workshop ($b = .09$, S. E. = .02, $p < .001$), participating in a cultural student organization ($b = .06$, S. E. = .02, $p < .01$), and having a positive cross-racial interaction ($b = .01$, S. E. = .00, $p < .001$). Conversely, believing that everyone can succeed through hard work ($b = -.18$, S. E. = .01, $p < .001$) and satisfaction with the present level of diversity within the student body ($b = -.07$, S. E. = .01, $p < .0001$) were both negatively associated supporting undocumented immigrants' access to education. Although these associations demonstrated significance, many of them had small effect sizes. Nevertheless, these findings demonstrate that many attributes and experiences have been associated with greater support of undocumented students.

The literature on attitudes toward undocumented students' pursuit of higher education has also examined the views of faculty and administrators within higher education. In a phenomenological study examining advocacy for undocumented students, the authors profiled how two administrators constructed their support for undocumented students (Crawford & Arnold, 2016). Studies have also examined the opinions of higher education leaders in a variety of ways: a survey of leaders from institutions in multiple states (Feranchak, 2007), a qualitative study of 25 community college administrators (Jauregui & Slate, 2009), and opinions of religious leaders at Catholic institutions (Parrish, 2015). Ishiwata and Muñoz (2018) also considered the views of faculty members and supports for undocumented students within their respective institutions. This research demonstrates that numerous studies have considered occupation within the academy when examining views toward undocumented immigration and undocumented students, underscoring the gap of examining postdoctoral fellows.

The effectiveness of interventions to improve attitudes toward undocumented students within institutions of higher education has also been examined by various research teams. One study employed a pre-test/post-test approach to consider attitudes toward undocumented students before and after a DREAMzone training that may have included a video profiling personal stories of undocumented students (Cadenas et al., 2018). Both modalities improved participants' views of undocumented immigrants compared to those who had not participated in the intervention. The study provided a viable, replicable method for institutions of higher education

to create interventions to foster support and improve campus climate for undocumented students on their campuses. Recent research has also examined institutional agents' abilities to incorporate undocumented/DACAmented status competency (UDSC) within their practice (Nienhuser & Espino, 2017). Naming UDSC also provides a replicable means for institutions of higher education to incorporate necessary professional development and training for faculty and staff on their campuses by having definable means for those with majority privilege, including Whites and those with legal status, to develop professional competency. Finally, Nienhuser (2018) examined institutional agents' views of policy implementation and associated challenges. Together, these studies demonstrate that a variety of attributes can be associated with support for undocumented immigrants and undocumented students. The literature also reveals that when considering the views of groups found within higher education, there is a gap in the literature for examining the attributes of postdoctoral fellows.

Research on Postdoctoral Fellows

In the past five years, higher education has acknowledged postdoctoral employment trends and the realities of the life of a postdoctoral fellow (Angervall et al., 2018; Bryan & Guccione, 2018; Cantwell & Taylor, 2013; Gloria & Steinhardt, 2017; Yang & Webber, 2015). The postdoctoral fellowship has been touted as “a special kind of hell” (Ruben, 2013, para. 1). Postdoctoral fellows encounter myriad issues in their employment at institutions of higher education, including low pay, long hours, and job insecurity (Camacho et al., 2016; Cantwell & Taylor, 2013; Ruben, 2013). Furthermore, postdoctoral fellows can be especially vulnerable to discrimination based on gender, race, and/or citizenship status (Camacho, 2017; Camacho et al., 2016; Camacho & Rhoads, 2015; Cantwell & Taylor, 2013). Postdoctoral fellows are expected to maintain high standards of productivity within the team of their principal investigator (PI) (Ruben, 2013). Postdoctoral fellows are often subject to maintaining the good graces of their PI (Camacho, 2017). Ultimately, a postdoc's PI may have the potential to make or break a fellow's future by connecting him/her with future job prospects or making a path forward more difficult. Research suggests that PIs, who are predominantly White men, prefer postdocs who are also White men. Research also suggests that the costs for visas for international postdocs are often deemed expensive and the responsibility of the postdoc (Camacho, 2017). The tendency for PIs to maintain the positionality as first author on a publication even when others have done more of the work is widely accepted in the academy, although postdocs without U.S. citizenship are the most productive when it comes to publications (Camacho, 2017; Camacho & Rhoads, 2015). Furthermore, institutions of higher education have overwhelmingly designed the postdoctoral fellowship to be based on an appointment in a specific department or lab, with little structural oversight (Camacho & Rhoads, 2015). Compensation and benefits have thus unsurprisingly been a long-standing issue for postdoctoral fellows (Ruben, 2013). Along with institutions of higher education, federal funding agencies have been slow to make recommendations for a livable wage and basic benefits, such as health insurance (Camacho & Rhoads, 2015).

Recent research continues to examine the trajectories of postdoctoral fellows. Although 50% of postdoctoral fellows (postdocs) are now from outside the United States, only 45% of these individuals remain in the United States after completion of their fellowship, as compared to 90% of postdoctoral fellows originally from the United States (Xu et al., 2018). Studies have also examined postdoctoral fellowships as they relate to career paths in research and teaching (Angervall et al., 2018) and whether a doctoral degree was “worth it” (Bryan & Guccione, 2018).

Establishing support offices on campuses employing postdoctoral fellows can establish a centralized resource for postdoctoral fellows (Ferguson et al., 2014). In addition, issues left unaddressed in the University of California system has led to the unionization of postdocs in the system (Camacho & Rhoads, 2015).

The lack of research on postdoctoral fellows within the field of higher education, and the absence of considering the postdoctoral fellowship as a reportable occupation, leaves an opportunity for future research to examine how the academy transitions this highly trained group into their final transition into the employment sector. This study conducts preliminary analyses using an existing data set to examine whether attributes of postdoctoral fellows are associated with views of immigration, including views toward undocumented immigration and education for immigrants. The present analysis seeks to better understand how these future faculty, researchers, and leaders inside and outside of the academy may inform the research on majority views of undocumented immigrants and undocumented students.

Theoretical Framework

This study employs Deaux's (2006) model for the social psychological study of immigration. Specifically, the model considers three levels: the macro, meso, and micro. Similar to Bronfenbrenner and Morris' (1998) ecological framework, Deaux (2006) considers the various levels of influence forming individual views, including social structures at large (macro), individual influences (micro), and where the macro and micro interact (meso). The relevant macro social structures for this study include immigration policy, such as the Deferred Action for Childhood Arrivals (DACA) executive order signed by President Obama in 2012. DACA, which provides temporary deferral of deportation, is relevant since this study employs the 2014 administration of the General Social Survey (GSS) (Smith et al., 2018). Larger sociological and demographic trends at the time of the 2014 administration of the GSS, such as the absence of a Congressional solution for undocumented students, and the representative nature of the GSS survey also encapsulate the Deaux's (2006) macro level.

The micro level factors considered by Deaux's (2006) model for the psychological study of immigration in this study include individual factors, such as citizenship status, gender, age, race, holding a graduate degree (or not), and holding a possible postdoctoral position. This study considers Deaux's (2006) macro level factors and their interaction with individual or micro level factors to assess intergroup attitudes at the meso level. The meso level of Deaux's (2006) model, or the interaction of macro and micro factors, includes intergroup attitudes (Caicedo, 2016). Specifically, the research problem for this study is to examine Deaux's (2006) meso level as to whether attributes associated with postdoctoral fellows predict views of "illegal" immigration and education for immigrants within the macro context.

Purpose and Research Questions

The purpose of this study is to examine whether respondents' attributes predicted views of immigration by conducting secondary data analysis using the 2014 administration of the General Social Survey (GSS) (Smith et al., 2018). The 2014 administration of the GSS was chosen because it is the most recently available administration of the GSS, which also includes occupation codes, which could be used to consider those working in a possible postdoctoral fellowship. In order to isolate macro level factors, such as the 2012 implementation of DACA, the 2014 GSS was not combined with data from previous years for this study. Specifically, the

present analysis examined whether having a possible postdoctoral position or duties related to those of postdoctoral fellows, along with other individual attributes, predicted views of immigration. The present analysis builds on previous literature using the GSS to examine views of undocumented immigrants and undocumented students (Haubert & Fussell, 2006; Kunovich, 2013; Palmer & Davidson, 2011). The current study uses more recent data: the 2014 GSS, as compared to the 1994 GSS (Palmer & Davidson, 2011), the 1996 GSS (Haubert & Fussell, 2006), the 1996 and 2004 GSS (Berg, 2009), and the 2006 GSS (Kunovich, 2013). The use of the 2014 GSS is uniquely timed after the 2012 implementation of DACA but before the election of Donald Trump.

This study contributes to previous literature examining attitudes toward undocumented immigrants and undocumented students' pursuit of higher education by using a large, publicly available data set. This study also contributes to previous literature on this topic by conducting analyses to consider attributes of a population often overlooked within higher education, and specifically overlooked by the literature on attitudes toward undocumented immigrants within the academy: postdoctoral fellows. Since the researchers coded occupation codes for possible postdoctoral fellowship positions, this analysis is considered preliminary. This study examines the following: (1) Does a combination of individual demographic factors, including employment as a possible postdoctoral fellow, predict views of undocumented immigration? (2) Does the same combination of individual factors predict views of education for immigrants? This study employed logistic regression to assess these research questions.

Methods

Instrument

The General Social Survey (Smith et al., 2018), used for secondary data analysis in this study, is a robust survey effort that has been conducted by the National Opinion Research Center (NORC) at the University of Chicago since 1972. The purpose of the survey is to facilitate research on American society and to provide updated, high quality data to social scientists, students, and policy makers (NORC, 2016a). The data collection is “designed to (...) monitor social change within the United States” (NORC, 2016a, para. 6). The GSS is designed to survey a random, representative sampling of households in the United States to participate in a 90-minute survey in person or over the phone (NORC, 2016b). The dependent variables used in this study were selected from the 2014 administration of the GSS to examine the most recent opinions available about immigration.

Participants

This study considered all respondents to the 2014 administration of the General Social Survey (GSS) (Smith et al., 2018) ($N=2538$). Since this study was conducted as a secondary analysis of the existing 2014 GSS data set, only the cases which had responses to all demographic variables and one of the dependent variables of interest were included. For the analysis of views of undocumented immigration, a total of 1012 cases were included, and for the analysis of views of immigrant education, a total of 1153 cases were included. The largest sample available was used for each research question separately in order to meet the minimum requirement of 20 individuals per group when conducting logistic regression (Leech et al., 2015).

Since the data set was publicly available (Smith et al., 2018) and had no connections to reidentifying information of participants, the study did not require the oversight of an institutional review board (Protection of Human Subjects Research, 2018). This was also confirmed by staff at the Colorado State University human research protection program (T. Felton-Noyle, personal communication, September 10, 2018).

Variables

Independent attribute variables constituted a host of individual characteristics, and previous literature helped to inform the inclusion of the variables used in the present study. Demographic, micro-level variables representing Deaux's (2006) model included: age (18-99); gender (sex in the GSS data set, with options of either male or female); race/ethnicity (defined as White, Black, or Other in the GSS); U.S. citizenship status (citizen or non-citizen); having a graduate degree (or not); and whether the respondent had an occupation code that could be a postdoctoral fellow position or relate to duties of a postdoctoral fellow. The U.S. census occupation codes do not include postdoctoral fellows as an occupation, even though postdoctoral fellows are recognized by such federal entities such as the National Science Foundation and professional organizations such as the National Postdoctoral Association. Therefore, for this study, a possible postdoctoral position or position involving duties of a postdoctoral fellow included occupation codes from the U.S. census, rendering this study a preliminary analysis. For additional information about all variables, see Appendix A.

The dependent variables were based on questions about immigration from the 2014 administration of the GSS (Smith et al., 2018). These included the following items: agreement with the statement "America should exclude 'illegal' immigrants" (EXCLDIMM): 5, strongly agree; 4, agree; 3, neither agree nor disagree; 2, disagree; and 1, strongly disagree. In addition, the variable "legal immigrants should have the same education as Americans" (IMMEDUC) was considered, and options involved the same 5-point Likert scale.

To predict respondents' views as supportive or unsupportive of "illegal" immigration and education for immigrants, dichotomous variables were created. For the dependent variable "America should exclude 'illegal' immigrants," responses were re-coded into a binary variable, EXCLDIMM_binary, such that 0 indicated agreement with the statement and 1 indicated disagreement with the statement. The dependent variable for "Legal immigrants should have the same education as Americans" was also transformed into a binary variable, IMMEDUC_binary, such that 0 indicated disagreement with the statement and 1 indicated agreement with the statement. For both binary dependent variables, responses indicating neither agreement nor disagreement were dropped.

Analyses

For the first research question, logistic regression was conducted using SPSS statistics software to assess whether the six predictor variables of age, gender, race, U.S. citizenship status, having a graduate degree, and having a possible postdoctoral fellowship occupation predicted whether "America should exclude 'illegal' immigrants." Research question two used logistic regression in SPSS to examine whether the six demographic variables agreement with the statement "legal immigrants should have the same education as Americans." This study met the assumptions for logistic regression specified by Leech and colleagues (2015), which indicates

that the outcome variable is dichotomous and mutually exclusive, and that logistic regression can be used when a combination of categorical and dichotomous variables are being used to predict a dichotomous outcome. Both models were evaluated for issues related to multicollinearity by comparing bivariate correlation values, which ranged from -0.19 – 0.33, and by calculating Variance Inflation Factor (VIF) values, which ranged from 1.00 – 1.08. Since Menard (1995) recommended that VIF values are below 10.00, the VIF values for the present study were well below the suggested maximum.

Results

Logistic regression was conducted to assess whether the six predictor variables of age, gender, race, U.S. citizenship status, having a graduate degree, and having a possible postdoctoral fellowship occupation predicted whether “America should exclude ‘illegal’ immigrants”. Table 1 presents descriptive statistics (N =1012). The mean age for the sample was 50, and 51% of respondents identified as women (female). The sample was 76% White, 14% Black, and 10% Other Races. A total of 94% of the sample had U.S. citizenship, and 11% of the sample held a graduate degree. Only 2.2% of the sample (N=22) held a (possible) postdoctoral position. A total of 73% of the sample agreed with the statement “America should exclude ‘illegal’ immigrants” while 27% disagreed with the statement.

Table 1.
Descriptive Statistics for Agreement with the Statement “America Should Exclude ‘illegal’ Immigrants” (N=1012)

	Mean	Std. Dev.
Age	49.72	17.546
Sex	1.51	.500
Race	1.33	.643
U.S. citizen	1.06	.244
Graduate degree	.1087	.31141
Possible postdoc	.0217	.14590
Excldimm_binary^	.2727	.44558

Note. ^ Agreement (0) or disagreement (1) with the statement “American should exclude ‘illegal’ immigrants”.

When all six predictor variables were considered together, they significantly predicted whether or not a respondent agreed with the statement “America should exclude ‘illegal’ immigrants”, $\chi^2 = 104.354$, $df = 5$, $N = 1012$, $p < 0.001$. Table 2 presents the odds ratios.

Table 2.
Logistic Regression Predicting Agreement with “America Should Exclude ‘illegal’ Immigrants” (N=1012)

Variable	Odds ratio	SE	p
Age	.982	.004	<.001
Sex	1.189	.150	.250
Race	1.420	.114	.002
U.S. Citizen	7.959	.315	<.001
Graduate Degree	1.214	.247	.433
Possible postdoc	1.221	.521	.702
Constant	.045	.486	<.001

Note: Exclimm_binary: Agreement (0) or disagreement (1) with the statement “America should exclude ‘illegal’ immigrants”.

Results suggested that the odds of disagreeing with the statement “America should exclude ‘illegal’ immigrants” became greater as age decreased ($p < .001$). In addition, the odds of disagreeing with the statement increased for individuals identifying as Black or another race ($p = .002$), and for those who were not a U.S. citizen ($p < .001$). Put another way, not being a U.S. citizen, as compared to being a U.S. citizen, increased the odds that a respondent would disagree with the statement “American should exclude ‘illegal’ immigrants’ by a factor of 7.959 ($p < .001$). In addition, having a graduate degree, as opposed to not having a graduate degree, increased the odds that a respondent would disagree with the statement by a factor of 1.214, and having a possible postdoc also increased the odds that a respondent would disagree with the statement of a factor of 1.221. Reporting being a woman (female) increased the odds that a respondent would disagree with the statement “America should exclude ‘illegal’ immigrants”. However, these relationships must be considered with caution since having a graduate degree, having a possible postdoctoral fellow position, and respondent’s self-reported gender were not significant factors even though the overall model significantly predicted whether respondents disagreed.

Logistic regression was also conducted to assess whether the six predictor variables of age, gender, race, U.S. citizenship, having a graduate degree, and having a possible postdoctoral fellowship occupation predicted agreeing with the statement “legal immigrants should have the same education as Americans”. Table 3 presents descriptive statistics ($N=1153$). The mean age

for the sample was 49, and 53% of respondents identified as women (female). The sample was 75% White, 15% Black, and 10% Other Races. A total of 93% of the sample had U.S. citizenship, and 12% of the sample held a graduate degree. Only 2.3% of the sample ($N=27$) held a possible postdoctoral position. A total of 91% of the sample agreed with the statement “legal immigrants should have the same education as Americans” while 9% disagreed.

Table 3.

Descriptive Statistics for Agreement with the Statement “Legal Immigrants Should Have the Same Education as Americans” ($N=1153$)

	Mean	Std. Dev.
Age	49.24	17.735
Sex	1.53	.499
Race	1.35	.661
U.S. citizen	1.07	.253
Graduate degree	.1162	.32063
Possible postdoc	.0234	.15129
Immeduc_binary^	.9098	.28659

Note. ^ Agree (1) or disagree (0) with “Legal immigrants should have the same education as Americans”

When all six predictor variables were considered together, they significantly predicted whether or not a respondent whether or not a respondent agreed that legal immigrants should have the same education as Americans, $\chi^2 = 15.911$, $df = 6$, $N = 1153$, $p = 0.014$. Table 4 presents the odds ratios.

Table 4.

Logistic Regression Predicting Agreement with the Statement “Legal Immigrants Should Have the Same Education as Americans” ($N=1153$)

Variable	Odds ratio	SE	p
Age	.996	.006	.538
Sex	1.188	.207	.405

Race	.851	.159	.313
U.S. Citizen	9.234	1.020	.029
Graduate Degree	2.354	.446	.055
Possible postdoc	.816	.772	.793
Constant	1.086	1.132	.942

Note: Immeduc_binary: Agreement with statement “Legal immigrants should have the same education as Americans”

Results suggested that the odds of agreeing with the statement “legal immigrants should have the same education as Americans” increased when respondents reported not being a U.S. citizen ($p = .029$) and when respondents held a graduate degree ($p = .055$). In other words, not being a U.S. citizen increased the odds of agreeing with the statement “legal immigrants should have the same education as Americans” by a factor of 9.234, and having a graduate degree increased the odds of agreeing with the statement by a factor of 2.354. Although not significant, reporting being a woman (female) also increased the odds of agreeing with the statement. Conversely, being older, being White, and having a possible postdoctoral position all decreased the odds of agreeing with the statement “legal immigrants should have the same education as Americans.” However, these relationships must be considered with caution since the variables were not individually significant even though they were part of a model that significantly predicted respondents’ agreement with the statement.

Limitations

This study involves several limitations. First, this study used an existing data set to examine majority views of immigration. This study specifically examined the intersection between attributes associated with being more supportive of undocumented immigrants as well as undocumented students and present views of immigration. Since this study used an existing data set, the analyses considered dependent variables and attribute variables that were already available. This study also employed a dependent variable containing dehumanizing language: the term “illegal” immigrants (Negrón-Gonzales, 2013). This terminology may have biased responses to the survey item. This same bias may have informed responses to the question “legal immigrants should have the same education as Americans.” The education item also does not distinguish between K-12 education federally protected for all minors by *Plyler v. Doe* (1982), and higher education (which some states have deemed illegal). In addition, the 2014 administration of the GSS is recent enough to encompass DACA as a macro factor in terms of national policy but is not recent enough to account for the election of Donald Trump in 2016. Put another way, the findings may not be generalizable to the present. Finally, this study created a variable to define a possible postdoctoral position since the census does not delineate postdocs as an occupation code.

Discussion

Using Deaux's (2006) model for the social psychological study of immigration, this study considered existing literature reporting on attitudes toward undocumented immigrants and undocumented students to inform an examination of individual attributes associated with supportive views of immigration. By employing the 2014 administration of the GSS, this study updated the findings of studies using administrations of the GSS from ten to twenty years ago (Haubert & Fussell, 2006; Kunovich, 2013; Palmer & Davidson, 2011). In addition, this study sought to conduct preliminary analyses to examine an overlooked population within the academy (specifically: postdoctoral fellows) generally as well as on the topic of attitudes toward undocumented immigrants and undocumented students. This study considered whether the combination of age, gender, race, U.S. citizenship status, having a graduate degree, and having a possible postdoctoral fellowship occupation predicted the binaries of "America should exclude 'illegal' immigrants" as well as "Legal immigrants should have the same education as Americans." Results suggested that this combination of variables significantly predicted agreement with both statements, even though holding a possible postdoctoral fellowship was not statistically significant.

This study contributes to the literature on how groups within the academy view immigration. Since postdoctoral fellows have been an overlooked group within higher education (Camacho, 2017; Camacho & Rhoads, 2015), this study addresses a gap in the literature. Furthermore, postdocs are positioned to have unique views of immigration given that more than half are from outside the United States (Ferguson et al., 2014; Xu et al., 2018). Considering whether an individual was in a postdoctoral-like occupation was part of a model that significantly predicted respondents' views regarding "illegal" immigrants and education of immigrants.

Applying Deaux's (2006) model for the social psychological study of immigration suggests that when combined with larger macro contexts, individual micro level factors informed meso level, or intergroup views, of "illegal" and legal immigrants. Specifically, Deaux's (2006) model suggests that individual demographic factors of minoritized identities, including identifying as a racial minority and as a non-U.S. citizen, significantly predicted increasing the odds of respondents reporting more positive views of undocumented immigrants. Being a non-U.S. citizen was also associated with increasing the odds of agreeing that immigrants should have the same education as Americans. These findings corroborate previous research on attributes associated with more support for undocumented immigrants and undocumented students, in that being a racial minority, a woman, and a non-native English speaker has been associated with greater support for undocumented immigrants (Garibay et al., 2016). Furthermore, just as the literature has suggested that higher levels of education are associated with more supportive views of undocumented immigrants (Berg, 2009; Haubert & Fussell, 2006; Kunovich, 2013), the present analysis also indicated that having a graduate degree was associated with increasing the odds of agreeing with the statement that "legal immigrants should have the same education as Americans." This study also found that as age increased, the odds decreased that a respondent would disagree with the statement "American should exclude "illegal" immigrants" which also replicates previous findings (Berg, 2009). Since younger respondents had less of an issue with undocumented immigrants and were more supportive of education for immigrants, perhaps this indicates that views will alter over time.

Deaux's (2006) model also suggests that the larger macro factors have continued to impact attitudes toward undocumented immigration. Since previous research had examined this topic using the GSS from 2004 and earlier, the 2014 administration considers larger political contexts such as DACA, changing state policy, and the notion of sanctuary cities and sanctuary campuses.

However, use of the 2014 data set is also prior to the election of Donald Trump and may not fully capture the “Trump effect,” or what the Southern Poverty Law Center (2016) has called the negative impact on undocumented immigrants. The “Trump effect” has been identified in K-12 schools as well as within higher education (Muñoz et al, 2018; Nienhusser & Oshio, 2018). It is possible that the present analysis illuminates the presence of negative attitudes toward undocumented immigrants and education for undocumented immigrants that served to catalyze the Trump effect in 2016. The model for social psychological immigration (Deaux, 2006) would suggest that the combination of individual, micro factors and larger, macro contexts combine to inform the meso views identified in this study.

Implications for Institutions of Higher Education

These findings have important implications for institutions of higher education. The results from this study suggest that institutions of higher education may want to consider ways to engage postdoctoral fellows on their campuses in initiatives designed to support immigrants and support undocumented students. Since individual factors which may be attributes of many postdoctoral fellows were found to be part of a model significantly predicting views of “illegal” immigration and immigrant education, postdoctoral fellows may be uniquely positioned to garner support for these vulnerable groups. Institutions of higher education can consider how postdoctoral fellows may respond to interventions such as DREAMzone (Cadenas et al., 2018) or incorporating Undocumented/DACAmented Status Competency to their training (Nienhusser & Espino, 2017). Given that previous research has touted the concerning trajectory for postdoctoral fellows (Camacho, 2017; Camacho & Rhoads, 2015; Ruben, 2013), engaging postdoctoral fellows into community building efforts has the potential to foster potential benefits, such as generating a sense of belonging and creating mentorship opportunities. Institutions of higher education should also ensure that postdoctoral fellows are given the flexibility to engage in this important work as part of their full-time employment.

Implications for Policy

Postdoctoral fellows constitute not only the future of tenure-track faculty within the academy but also future government officials, policy analysts, and entrepreneurs. Since more than half of postdocs are from outside of the United States (Ferguson et al., 2014; Xu et al., 2018), engaging postdoctoral fellows toward partnering for the success of immigrants and undocumented students can benefit members of all three groups individually and collectively while simultaneously benefitting the larger community. The engagement of postdoctoral fellows in greater support of immigrants and undocumented immigrants can provide pathways for the development of more inclusive policies in a variety of disciplines and sectors. In turn, these sectors can work to drive the need for more comprehensive policy solutions at institutional, state, and national levels.

Future Research

Although this study generated a category of possible postdoctoral fellows, future data collection efforts in the field of higher education and beyond should consider postdoctoral fellows as an occupation. Such data collection efforts will bolster an established profession, since

professional organizations already exist for postdoctoral fellows (National Postdoctoral Association, 2018) and the number of local organizations are on the rise (Ferguson et al., 2014). Furthermore, identifying postdoctoral fellows as an occupation and as a subpopulation within the academy matters, because this group is positioned to become leaders in the future workforce inside and outside of the academy. Future research should also make humanizing language, as described by Negròn-Gonzales (2013), a standard for engaging in questions about views of undocumented immigrants and immigrant education.

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Appendix A: Key Variable Details

Table 5.

Key GSS Variables

GSS Variable	Definition	
EXCLDIMM: America should exclude 'illegal' immigrants.	5	“Strongly agree”
	4	“Agree”
	3	“Neither agree nor disagree”
	2	“Disagree”
	1	“Strongly disagree”
IMMEDUC: Legal immigrants should have the same education as Americans.	5	“Disagree strongly”
	4	“Disagree”
	3	“Neither agree nor disagree”
	2	“Agree”
	1	“Agree strongly”
DEGREE (highest earned by respondent, respondent’s mother, respondent’s father)	4	“Graduate”
	3	“Bachelor”
	2	"Junior college"
	1	"High school"
	0	"Lt high school"

Table 6.

Generated Items Based on GSS Variables

GSS Variable	Definition	
Graduate Degree: based on transposing degree variable	0	no graduate degree
	1	graduate degree
EXCLDIMM_binary: based on EXCLDIMM variable	0	Agree with statement
	1	Disagree with statement (neither agree or disagree dropped)
IMMEDUC_binary: based on IMMEDUC variable	0	Disagree with statement
	1	Agree with statement (neither agree or disagree dropped)

Possible postdoc: Postdoctoral-like occupation codes (based on / OCC10)	2200	"Postsecondary teachers"
	1965	"Miscellaneous life, physical, and social science technicians"
	1950	"Social science research assistants"
	1940	"Nuclear technicians"
	1930	"Geological and petroleum technicians"
	1920	"Chemical technicians"
	1910	"Biological technicians"
	1900	"Agricultural and food science technicians"
	1860	"Miscellaneous social scientists and related workers"
	1840	"Urban and regional planners"
	1830	"Sociologists"
	1820	"Psychologists"
	1815	"Survey researchers"
	1800	"Economists"
	1760	"Physical scientists, all other"
	1740	"Environmental scientists and geoscientists"
	1720	"Chemists and materials scientists"
	1710	"Atmospheric and space scientists"
	1700	"Astronomers and physicists"
	1660	"Life scientists, all other"
1650	"Medical scientists"	
1640	"Conservation scientists and foresters"	
1610	"Biological scientists"	
1600	"Agricultural and food scientists"	
