

PERCEIVED DISCRIMINATION IN IMMIGRANT AND REFUGEE ADOLESCENTS IN
A MIDDLE TENNESSEE HIGH SCHOOL: EXAMINING THE IMPACT OF THE 2016
ELECTION

by
Marquinta Lee Harvey

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Dissertation Committee

Dr. Denise Bates, Chair

Dr. Norman Weatherby

Dr. Claire Cook

This dissertation is dedicated to my wonderful family. Thank you to my loving and patient husband Brandon M. Harvey and beautiful children, Levia Elise Harvey and Brandon Martez Harvey Jr. I would also like to thank my supportive parents, Dwayne and Regina Dorsey. Your support means the world to me.

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ABSTRACT

The body's response to stress is an adaptive and useful response to stressors that occur in everyday life. However, a prolonged or maladaptive stress response can lead to numerous health-related problems. Studies often assess stress using Western ideology to diagnose or treat various minority groups but may underestimate levels of stress experienced by these groups. It is not broadly understood that the experience of discrimination is a social stressor that can negatively impact one's health. While most infrequent stressful experiences do not increase an individual's vulnerability to illness, chronic discrimination can be characterized as a distinct stressor that causes physiological responses such as high blood pressure, elevated heart rate, hyperventilation, and over/under fluctuation of diet. These types of heightened physiological responses over time can have negative long-term effects on health outcomes. Discriminatory behavior towards minorities has been a continuing problem in the United States, which has been exasperated by the negative rhetoric and policies put forth by Trump administration. With the new political environment and change in attitudes in the United States towards various minority groups, this study aimed to add to the body of research by investigating the association of everyday discrimination in high school aged immigrant and refugee students in Middle Tennessee.

The results of the current study illustrated the Williams Everyday Discrimination Scale to be a valid and reliable measure of the construct of perceived discrimination within the surveyed population. Although the hypothesized increase in levels of everyday discrimination using the 2016 Presidential election as the historical point of interest was not significant, high levels of perceived discrimination were reported by study

participants. This finding has the potential to affect physical, mental and emotional well-being as well as health behaviors that can influence physical and mental health.

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CHAPTER I: INTRODUCTION

Stress

The body's response to stress is an adaptive and useful response to stressors that occur in everyday life. A prolonged or maladaptive stress response can lead to numerous health-related problems including anxiety and depression (Zuckerman, 1999). A maladaptive stress response has also been linked to cardiac disease, lowered immune functioning, inflammation, impaired memory, and premature aging of genes (Kiecolt-Glaser, McGuire, Robles, & Glaser, 2002; McEwen, 2006; O'Donovan et al., 2012). Stress is a common problem that impacts a large number of people living in the United States. According to the American Institute of Stress (2014) report, 76% of people report experiencing physical symptoms caused by stress and 73% of people report experiencing psychological symptoms caused by stress.

Early stress researchers associated recent stressful life events with the appearance of psychological or physiological symptomology (Grant, Sweetwood, Yager, & Gerst, 1978). The literature then starts to expand the unidimensional view of stress and includes factors such as social support, moving to a more multidimensional view of stress (Smith, 1985). Studies often assess stress using Western ideology to diagnose or treat various minority groups based on studies conducted in majority white populations (Smith, 1985). More recent literature shows race as a social stressor and begins to expand various measurement tools and assessments to include racial minorities. The development of various instruments that evaluate self-reported experiences of discrimination were created usually to evaluate the stress of racial or gender discrimination. A limitation of the

discrimination as a stressor research is most scales were designed for use in African American populations (Lewis et al., 2006; Lewis et al., 2009; Troxel et al., 2003; Beatty & Matthews, 2009). The overreliance on discrimination scales developed for African Americans could be an issue because while most visible minority populations experience discrimination, various minority groups have a different history of discrimination and oppression (Omi, 2014). This varied history may cause different minority groups to have a varied perception of the experience of discrimination.

Discrimination as Stressor

Discrimination is defined as a perceived experience of disruptive or prejudiced behavior, either chronic or acute, imposed on another because of a social or cultural difference. However, it is not broadly understood that the experience of discrimination is a social stressor that can negatively impact health. While most infrequent stressful experiences do not increase an individual's vulnerability to illness, chronic discrimination can be characterized as a distinct stressor that causes physiological responses such as high blood pressure, elevated heart rate, hyperventilation, and over/under fluctuation of diet. These types of heightened physiological responses over time can have long-term effects on health (Karlsen & Nazroo, 2002).

Essed (1991) conducted a comparative analysis of contemporary racism in the United States and in the Netherlands by interviewing fifty-five black women. This was an analysis of gendered social constructs of racial discrimination, which surmises that racial discrimination is neglected as a multi-dimensional problem: how it is experienced, how it is covertly manifested, and how it is challenged and overcome in everyday life (Essed,

1991). While the subject of Essed's (1991) investigation focuses on the negligence of everyday realities of racial discrimination experienced by black women, she highlights prevalent covert manifestations of racism that are largely neglected such as: contact avoidance, exclusion, patronization, favoritism, or given lower priority assuming lack of knowledge or confidence (Essed, 1991).

The concept of "Everyday Racism" theorizes that institutional systemic oppression and everyday interactional experiences occur simultaneously and can be perceived as a realm of both covert and overt forms of racial discrimination (Essed, 1990). Giving reference to Essed's concept of "Everyday Racism", Ong (2009) conducted a study that examined the day-to-day chronic experiences of unfair treatment and increased risks for poorer health due to biological dysregulation. This research discusses the difference between lifetime unfair treatment, which refers to "acute, major experiences of discrimination across a variety of life domains (such as being unfairly denied a promotion or being unfairly prevented from moving into a neighborhood)", and "everyday unfair treatment, which captures the range of chronic, day-to-day experiences of discrimination (such as being followed around in stores or being treated with less courtesy or respect than others)" (Ong, et al, 2009; Pascoe, Smart, & Richman, 2009; Williams & Mohammed, 2009).

Every day unfair treatment proves to have stronger negative effects than major experiences of discrimination on overall mental and physical wellness due to a heightened level of physiological response demands to cope with discrimination stress (Ong, et al, 2009). This repeated exposure is disruptive and therefore wears on effective responsiveness to discriminative challenges (Ong et al., 2009). McEwen and Steller

(1993) introduced the concept of Allostatic Load (AL), or the cumulative “wear and tear” of chronic stress on the body. These stressors can cause dysregulation of interconnected physiological systems, such as irregular or reduced physical activity across multiple regulatory systems, “including the sympathetic nervous system (SNS), hypothalamic-pituitary-adrenal (HPA) axis, immune system, and cardiovascular and metabolic processes” (Sin, Graham-Engeland, Ong, & Almeida, 2015). Higher allostatic loads have also been linked to the early onset of cardiovascular disease and slow deterioration of cognitive functions (Seeman, McEwen, Rowe, & Singer, 2001).

Comparatively, both the studies of Essed (1991) and Ong (2009) explore physiological stress imposed on African-Americans caused by discrimination with various confounding variables. African-Americans are the largest of all racial/ethnic minorities to self-report everyday black-white experiences of discrimination which have been linked to physical and mental health problems (Kessler et al., 1999; Schulz et al., 2000; Williams et al. 1997, 1999). However, there is not enough self-reporting evidence among other racial/ethnic minorities that can be used to measure the stressor of daily discrimination to validate significant impacts on health (Ong et al., 2009). To gain substantial data from other racial/ethnic minorities more studies would need to focus on “within-group variation” to uncover the cultural and socio-demographic differences in diverse geographic locations (Brown et al., 2000).

One criticism of the existing literature is the focus on the potential pathology of the stress of discrimination and not the overwhelming resilience displayed by minority groups. Resilience can be defined as an individual’s ability to bounce back or forward following adversity and challenge and the ability to cope effectively when faced with

adversity” (Wagnild & Collins, 2009). Resilience also is affected by the personal qualities such as inner strength, competence, optimism, and flexibility that allow an individual to thrive in the face of adversity (Connor & Davidson, 2003; Wagnild & Collins, 2009). Studies in racial minority groups have indicated that resilience is not only predicated on personal qualities but is multidimensional and can be thought of as a more communal construct that includes a broader social context, therefore resilience can be moderated by things such as personal qualities, support, and religion (Hutchinson & Dorsett, 2012). This construct relates to salutogenesis, a theory that outlines ‘how people manage stress and stay well’ (Antonovsky, 1987). The basis for this theory details an individual’s sense of coherence, a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that one’s internal and external environments are predictable. An individual believes there is a high probability that things will work out as well as can reasonably be expected. This belief hinges on three key principles: comprehensibility, manageability, and meaningfulness (Antonovsky, 1979 & 1987). Sense of coherence is an individualistic way of thinking, being and acting, with an inner trust, which enables people to identify, benefit, use, and re-use various resources (Eriksson & Lindström, 2006).

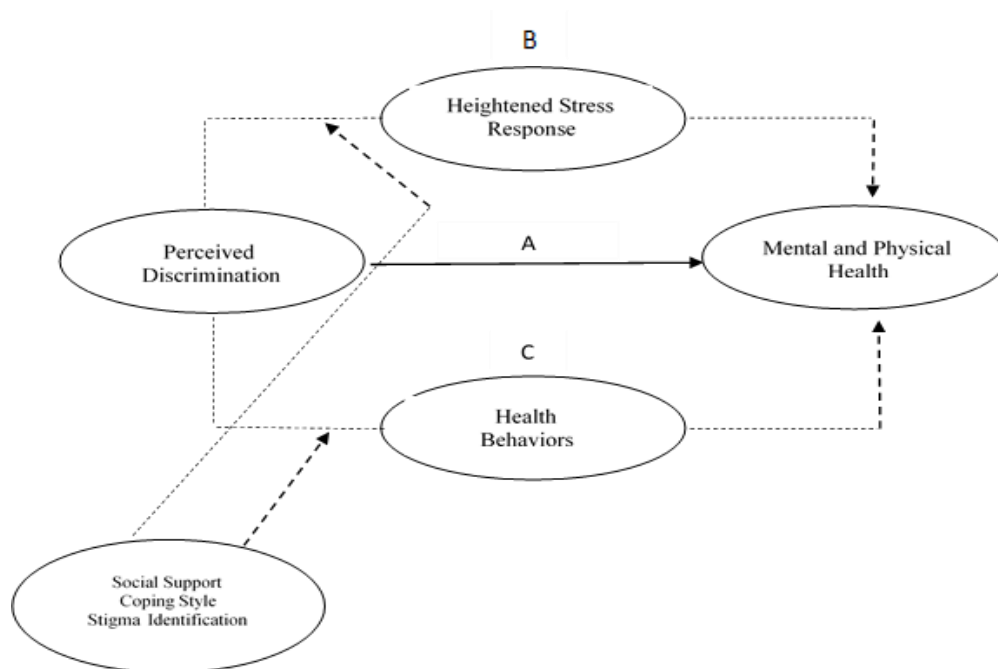
Stress Process Models

Lazarus and Folkman (1984) developed what is known as the original Transactional Stress and Coping Model, a problem-based coping framework that evaluates harm, threat, and challenge, and then allows one to cope with a stressor through introducing a solution to reduce perceived complexity; reappraisal and reduction of the

problem; and finally, the regaining of confidence and control over the stressor. Clark et al., (1999) created a stress process model that specifically illustrated the health effects of racial/ethnic perceived discrimination (Clark, 2004; Clark, Anderson, Clark, & Williams, 1999).

In a meta-analytic review of the existing literature on perceived discrimination and health outcomes, Pascoe and Richman (2009) created a model that explains three pathways in which the stress of discrimination may effect psychological and physiological health outcomes (see Figure A1). Path A shows a direct relationship between perceived discrimination and mental and physical health. Path B illustrates that perceived discrimination and mental and physical health may be partially moderated through the stress response triggered by a discriminatory experience. When an individual perceives stress regularly the stress response will be activated more frequently, and this is often associated with a negative emotional state, and elevated physiological stress responses such as cardiovascular reactivity and cortisol responses. Health problems can occur from this increased allostatic load generated by heightened stress responses and negative emotional states. Path C illustrates another pathway between perceived discrimination and mental and physical health that may be moderated by changes in health behaviors. Experiences of perceived discrimination can influence health behaviors and those health behaviors may negatively impact health outcomes. Paths B and C can be influenced by variables related to resiliency like social support, stigma identification, and coping. These resiliency variables act as mediators that can positively or negatively affect perceptions of discrimination and in turn influence mental and physical health outcomes (Pascoe & Richman 2009).

Figure A1.
Pathway of Perceived Discrimination



Note: Pathways illustrating how perceived discrimination influence health outcomes. Solid lines indicate pathways with direct influence and dashed lines indicate pathways with influence mediated by moderating variables. Adapted from Pascoe & Richman, 2009

Limited information of Immigrant and Refugee Populations

The association between perceived discrimination and negative health outcomes has been well established in African American populations (Pascoe & Richman 2009). This may be due to research measuring perceived discrimination being skewed towards African American populations, but it is notable that other minority groups such as immigrants and refugees are likely to face discrimination as well (Kim, Sellbom, & Ford, 2014). The little research existing on the topic of perceived discrimination in immigrant

and refugees usually concerns racial discrimination. Articles addressing generalized discrimination are scarce and are usually limited to Asian and Hispanic populations. The literature in this area does show an association between discrimination and increased psychological distress and depressive symptoms in various refugee populations. The negative effect of discriminatory experiences can be mediated by positive coping. Forbearance coping styles are associated with less psychological distress than confrontational coping practices (Ellis et al., 2010; Noh et al., 1999). The ability for refugees to use acceptance and avoidance coping styles, maintain traditional ethnic values, and a belief of a better future allows them to minimize perceptions of discriminatory experiences and lower their chance of developing psychological distress (Kira et al., 2010; Low, Kok, & Lee, 2014; Noh et al., 1999). More research is needed to understand the influence of perceived discrimination and its influence on health outcomes.

Limited Information in Adolescent Populations

Research on perceived discrimination in immigrant and refugee populations under the age of eighteen is severely lacking. More evidence-based research is needed to understand the perception of everyday discrimination and its effect on physical and mental health as well as self-efficacy which could influence academic performance and outcomes. Adolescence is a critical time for investigating the impact of discrimination for racial minorities (Sellers et al., 1997; Fisher, Wallace, & Fenton, 2000). By the time a child reaches adolescence, most individuals that belong to a racial or ethnic minority group have experienced some type of discrimination and are aware of its influence in

their daily lives (Spears, Brown, & Bigler, 2005). Adolescence is the time when individuals begin to explore outside of their familial homes and venture into public places where they can become targets of discriminatory practices (Fisher, Wallace, & Fenton, 2000). These discriminatory experiences are correlated with emotional difficulties like increases in anger, conduct problems and depressive symptoms (Brody et al., 2006). Racial identity, defined by Helms (1990) as “a sense of group or collective identity based on one's perception that he or she shares a common racial heritage with a particular group,” can act as a protective factor against perceptions of discrimination and the formation of a healthy identity is an important developmental life task during adolescence (Erikson, 1968; Phinney 1989; Seller, Morgan, & Brown, 2001).

Research shows that Black and Hispanic adolescents have higher reported rates of institutional discrimination than their White and Asian counterparts (Fisher, Wallace, & Fenton, 2000). Within Black and Latino adolescents, lowered academic success including lowered grades and decreased academic motivation are associated with experiences of perceived discrimination or even expecting future discrimination from teachers and peers (Alfaro, Umaña-Taylor, Gonzales-Backen, Bámaca, & Zeiders, 2009; Eccles, Wong, & Peck, 2006).

Everyday Discrimination Scale

To address the lack of research concerning immigrant and refugee adolescent populations more studies using valid measurement tools should be conducted. The Everyday Discrimination Scale (EDS) is a scale that has been validated in immigrant and refugee populations (Lewis et al., 2012). The EDS was developed as part of the Detroit

Area Study Discrimination Questionnaire in order to address acute but chronic forms of discrimination. This type of discrimination is often described as “daily hassles” or microaggressions, which can be intentional or unintentional brief verbal, behavioral or environmental indignities that communicate hostile, demeaning, or negative slights and insults towards an individual belonging to a visible minority population (Pierce, 1970). Microaggressions may seem harmless but can have negative consequences for minority groups and remind them of their perceived lower status (Pierce, 1974). Microaggressions experienced in adolescents have the potential to be harmful, and influence future educational and occupational decisions and health outcomes (Huynh, 2012). These interactions may effect youth development through social interactions that may potentially shape their academic and social experiences (Garcia et al., 1996). These types of interactions can have detrimental effects on health and the lack of existing research in this area prompted Williams et al., (1997) to create a tool to measure perceived discrimination.

Perceived discrimination was measured using the Everyday Discrimination Scale which collects information on perceptions of routine discrimination over the course of a persons’ lifetime (Williams et al., 1997). This scale is a valid and reliable measure of general perceived discrimination (Krieger et al., 2005). This scale has been validated in several racial minority populations including African Americans (Taylor et al., 2004), Hispanic-Americans (Perez, Sribney, & Rodriguez, 2009; Pérez, Fortuna, & Alegría, 2008), and Asian-Americans (Gee et al., 2007). Students will be asked, “In your day-to-day life, how often have any of the following things happened to you: being treated with less courtesy than others; less respect than others; receiving poorer service than others in

restaurants or stores; people acting as if you are not smart; they are better than you; they are afraid of you; they think you are dishonest; being called names or insulted; and being threatened or harassed.” Next participants were asked to give the frequency of nine discriminatory events using the following responses: almost everyday, at least once a week, a few times a month, a few times a year, less than once a year, or never.

Participants can then indicate the main reason they believed the discriminatory experiences occurred by selecting from a fixed list of attributions, including ancestry/national origin/ethnicity, gender/sex, race, age, height/weight, skin color, and other.

Political Environment in United States

Research regarding the effects of perceived discrimination in immigrant and refugee populations in the United States is timely due to the negative policies and rhetoric towards the aforementioned populations. The 2016 Presidential Election changed the political environment in the United States from a liberal to a conservative governing body. This change has a profound effect on racial minorities, especially immigrant and refugee populations. Under the Obama administration the goal was to create tolerant immigration policies, like the Deferred Action for Childhood Arrivals (DACA) program. However the 2016 election cycle illustrated a change in attitude towards current and potential immigrants and refugees in the United States. Then candidate Donald Trump made immigration reform the centerpiece of his campaign, framing immigration as a major economic and national security threat. To combat this perceived threat he promised as president to build a wall on the United States and Mexico border to prevent illegal

immigration, make stark cuts to legal immigration, and perform extreme vetting of all new application for admission into the United States. (Pierce & Selee, 2017).

Since President Trump's inauguration, anti-immigrant sentiment and policy changes have caused increased anxiety and awareness within immigrant communities. Immigrant and refugee populations are affected by these policies and have changed the way they live their lives to cope with the stress of these changes. In addition, attitudes towards immigrants in the United States have become more negative (Pierce & Selee, 2017). The Southern Poverty Law Center has reported increases in complaints of hate crimes such as vandalism, threats, and intimidation since Election Day. Negative attitudes and behaviors are not insulated from school-age children. According to Teaching Tolerance, a group organized by the Southern Poverty Law Center, educators have reported the election has had a negative impact on student behavior and an increase in derogatory language used towards students of color, Muslims, and immigrants (Linberg, 2017). These changes in political and social environments since President Trump's inauguration have particular power to influence the dynamics of immigrant and refugee youths' lives across the United States, and specifically in locations where such populations are steadily increasing.

Immigration in Tennessee

Tennessee has a small but growing number of immigrants. Foreign born individuals account for approximately 5% of the state's population. In 2015, Tennessee was home to 331,570 immigrants with 146,013 classified as women, 154,709 classified as men, and 30,848 classified as children (American Immigration Council, 2017). The

immigrant population is vital to Tennessee's economy with immigrants comprising over 23% of those working in farming, fishing, and forestry and approximately 17% of life, physical, and social sciences employees (NAICS, 2015).

The Middle Tennessee area has seen a marked increase in immigrant and refugee populations over the last decade. Metro Nashville has doubled its foreign born population, and immigrant and refugees now comprise over 12% of the population. This is partly due to immigrant friendly policies put in place by former Nashville Mayor Karl Dean. The policies included turning libraries and several community centers into information centers for legal permanent residents interested in acquiring American citizenship, an initiative to involve immigrants in local government and creating partnerships with community organizations, and the creation of a Parent Ambassadors program that assists families based on language spoken in navigating the school system. These initiatives spurred a visit from former President Barack Obama to launch his executive actions to provide temporary legal status and work permits to more than 5 million immigrants who are undocumented and bolstered Nashville as "empowering and engaging New American community leaders," according to former White House Press Secretary Josh Earnest (Garrison, 2014). Although Nashville has been progressive in its policies towards immigrants, Tennessee is still a very conservative state with undeniable ties to racism.

According to the Tennessee Immigrant and Refugee Rights Coalition, since the election of President Donald Trump, Nashville immigrants have been living in fear and report mistrust of local law enforcement. As a result, immigrants are hesitant to report crimes, visit health clinics or drive their children to school (Sawyer, 2017). Understanding

how this change in political environment affects Tennessee residents is vital. The current research study will include participants from a Middle Tennessee high school that is comprised of over 30% non-English language background students (NELB) and will assess the role of perceived discrimination.

Research Questions

In this dissertation we sought to examine 1) the extent to which immigrant and refugee high school students in Middle Tennessee report experiencing everyday discrimination and 2) the effect of the Election of President Donald Trump on perceived discrimination in refugee and immigrant high school students in Middle Tennessee.

Aims

In this dissertation I examined the relationship between immigrant and refugees in the United States and perceived discrimination. My dissertation consists of three independent but related articles addressing the following topics:

- 1) The first article synthesized existing research of everyday/perceived discrimination in immigrant and refugee populations. The articles included in this study were measures of general perceived discrimination, not limited to racial or gender discrimination. To my knowledge a systematic literature review on this topic has not been conducted and this information will be valuable in synthesizing existing literature.
- 2) The second article will address reliability and validity in the Everyday Discrimination Scale (EDS) developed during the Detroit Area study (William et al., 1997). This tool has been validated in several racial minority populations but a

limited amount of research exist in populations under the age of 18. This study will insure the EDS is an appropriate measure for the immigrant and refugee students used in our study. Reliability was measured using Cronbach's alpha and the validity of the EDS was assessed using Item Response Theory (IRT). IRT describes the relationship between a latent trait, the properties of the items in the scale, and respondents' answers to the individual items. A limited amount of IRT analyses have been conducted using this scale. This analysis will add to the existing literature and provide reliability and validation information for future researchers.

- 3) The third article measures two constructs. The first construct addresses the actual presence of perceived discrimination in the study population using a descriptive analysis. Pilot data was used from one high school in Middle Tennessee known for receiving a large number of immigrant and refugee youth into their system. Establishing that high school aged immigrants and refugees in the Middle Tennessee actually perceive everyday discrimination was critical before attempting to make any further inferences. The second construct examines if a difference in everyday discrimination is observed using the 2016 Presidential election as the historical point of interest. An increase in the perception of discrimination in English Language Learners in this Middle Tennessee High School has the potential to effect physical, mental and emotional well-being as well as health behaviors that can influence physical and mental health.
- 4) Finally, the last chapter summarizes the findings of this dissertation and includes suggestions and future directions.

CHAPTER II: PERCEIVED DISCRIMINATION IN IMMIGRANT AND REFUGEE POPULATIONS: A REVIEW OF THE LITERATURE

Introduction

Stressful life experiences linked to racial discrimination can adversely impact the mental and physical health of minority populations. Stressors experienced in minority populations have two main paths in which they can affect minorities. First, stress is linked to social structure and social status. An individual's social role determines the types and quantities of stress to which they may be exposed (Pearlin, 1989; Williams & House, 1991; Williams et al., 1997). The social structure of visible minorities in society exposes them to higher levels of discriminatory stress than the majority population (Williams et al., 1997). Second, the experience of discriminatory incidents can cause psychological distress and negatively affect mental health, which can further lead to adverse changes in physiological health (Nadimpalli et al., 2016).

A major critique of stress literature is its ineffectiveness at capturing the stressful life experiences of vulnerable populations such as economically disadvantaged individuals and visible minorities due to researchers in the field using a Westernized point of view. Descriptions of incidents of discriminatory experiences suggest health is negatively affected by socioeconomic status and the level of exposure to adversity over the course of life (Williams et al., 1997).

Discrimination is measured in a variety of ways using multiple scales that capture information based on conscious and subconscious interpersonal interactions to more

institutionally rooted systemic practices. Discrimination can be based on many factors including but not limited to race, religion, language, and country of origin.

Discriminatory stressors associated with immigrant and refugee experiences are usually explained in terms of major trauma related experiences of discrimination. However the pervasive and cumulative nature of everyday discriminatory experiences are shown to have a far more detrimental effect on individual physical and mental health (Williams et al., 1997). Everyday discrimination is defined as “a range of events, many of which appear to be ‘trivial’ or even ‘normal’ ... Certain rights, respect, and recognition, which the majority group take for granted in their own lives, but are denied to minority groups” (Essed, 1990, 1991). Perceptions of discrimination can be moderated by personal qualities such as inner strength, competence, optimism, and flexibility that allow an individual to thrive in the face of adversity and a more communal construct that includes a broader social context, like community support and religiosity (Connor & Davidson, 2003; Hutchinson & Dorsett, 2012; Wagnild & Collins, 2009).

Recent studies show everyday discrimination being positively associated with coronary artery calcification (Lewis et al., 2006), C-reactive protein, a marker of inflammation (Lewis et al., 2010), elevated blood pressure (Lewis et al., 2009), lowered birth weight (Earnshaw et al., 2013), cognitive impairment (Barnes et al., 2012), poor sleep (Lewis et al., 2012), premature death (Barnes et al., 2008), and visceral fat (Lewis et al., 2011). More evidence shows that discrimination may be a key determinant of health; however, studies focusing on recent immigrants and refugees remain scarce. Immigrant and refugee populations have a unique perspective and experiences that may encompass multiple forms of discrimination not limited to race or physical appearance.

There is a lack of published research explaining how discrimination affects immigrant and refugee health and health-care service and population health patterns and conditions.

In order to better address this gap, a review was conducted to synthesize current information regarding experiences of discrimination for new immigrant and refugee populations focusing on experiences of everyday discrimination/perceived discrimination. Due to the unique history and present political climate in the United States regarding immigrants and refugee populations the search was narrowed to existing studies that have occurred in the United States. The immigrant population in the United States in 2013 was estimated to be 41.3 million, accounting for almost 13 % of the U.S. population. If second generation immigrants are added to the previously mentioned statistic the immigrant population would account for almost a quarter of the entire population of the United States. Immigrants are key to the U.S. workforce and school communities. Although the U.S. only accounts for 5% of the global population, it attracts approximately 20% of the world's migrants (Zong & Batalove, 2015). A change to current political policies concerning immigrants could have a drastic effect on the U.S. population's demographics and economy.

Methods

A systematic search of the literature was conducted between March 2017 and June 2018. The literature search procedure was used to locate both published and unpublished research. The primary method used to locate literature was through major electronic databases, including PsycINFO and Sociological Abstracts. PsycINFO is a database produced by the American Psychological Association. This database includes

peer-reviewed research in a digital format pertaining to literature and research in the social and behavioral sciences. PsycINFO is a comprehensive source of scholarly research finding within the field of psychology and related disciplines. This database includes articles from 1597 to present day and was started in 1967 (American Psychological Association, 2018). Sociological Abstracts indexes the international literature of sociology and related disciplines in the social and behavioral sciences. It includes the companion file Social Services Abstracts, which provides bibliographic coverage of current research focused on social work, human services, and related areas. This database includes articles from 1952 to present day (ProQuest, 2018).

Discrimination-related keywords used in database searching included discrimination and racism. The aforementioned keywords were paired with population descriptors such as immigrant and refugee. When using the broader search term “discrimination,” many articles unrelated to the scope of this review were retrieved. So the search strategy used to find more relevant results included the following string of terms: “Perceived” or “Everyday Discrimination” + “Immigrant” and/or “Refugee.” To be included in the research synthesis, articles had to meet a variety of criteria. The most important inclusion factor for an article was data relating discrimination to the immigrant and/or refugee experience, specifically studies that included a measure of everyday or perceived discrimination. Only studies conducted in the United States of America were included for this particular study because of the unique history and political climate.

The computer database search located approximately 341 articles, dissertations, and book chapters. If titles and abstracts of the above documents contained data that may

be relevant to the analysis then full documents were retrieved. This process ultimately identified 25 studies relevant for further study, which spanned 1998 –2018.

Results

Twenty-five articles containing relevant information were identified. Several of the articles covered more than one aspect related to discrimination. Eleven articles reported on the association of perceived discrimination and mental health issues, six articles report on physical health, three articles report on language, nine articles report on acculturation, and eight report on ethnic identity.

Mental Health

The majority of the studies conducted on everyday discrimination in immigrant and refugee populations pertain to emotional and mental health such as:

Depression, Anxiety, Life Satisfaction. Reports of perceived or everyday discrimination were associated with higher rates of anxiety and depression in adults, young adults and adolescents (Tsai & Thompson, 2015; Anglin et al., 2016; Kim, 2016; Chae et al., 2012; Ellis et al., 2010; Sinkale, 2008; Yoshihama, Bybee, Blazevski, 2012; LeBron et al., 2014; Oh, 2015; Leu, Walton, & Takeuchi, 2011). However, a few studies did not have a statistically significant association between everyday discrimination and depressive symptoms but reported that the data trended towards a relationship between the two variables (Tsai & Thompson, 2015; Chae et al., 2012; Sinkale, 2008).

For example, a study from a national representative survey examined mental health outcomes of adult Latino and Asian refugees post resettlement. This study confirmed the more widely studied assertion that post-resettlement trauma is associated

with mental health outcomes. Results also show a positive relationship between higher reports of everyday discrimination and increased odds of being diagnosed with anxiety disorder. The effects of everyday discrimination and anxiety disorder was particularly pronounced in Latino refugees compared to their Asian counterparts (Kim, 2016).

One of the few articles reporting on everyday discrimination in adolescents examined English speaking Somali refugees ages 11 to 20 years old. Discrimination was significantly correlated with depressive symptom. Over seventy percent of study participants reported experiencing at least one act of discrimination ($M = 5.94$, $SD = 7.38$). When participants were asked about their perceptions of the reasons for discriminatory acts (including race, nationality, religion, gender, language, age, newcomer status, clothing, or other), the most commonly mentioned reason for discrimination was Somali identity (Ellis et al., 2010).

In a study examining Bosnian refugees, perceived discrimination was not predictive of depressive symptoms depression ($t(123) = 1.50$, $p = .14$, $\beta = .13$) or post-traumatic stress syndrome ($t(123) = -.09$, $p = .93$, $\beta = -.01$). However a significant association with discrimination and lowered life satisfaction did exist ($t(123) = -5.36$, $p < .001$, $\beta = -.43$) (Sinkale, 2008).

Post-Traumatic Stress Disorder and Psychosis. In a study examining the relationship between perceived discrimination and psychotic events a positive linear relationship was revealed. The population consisted of Afro-Caribbean, Hispanics, Asians, and African Americans and compared those who reported never experiencing discrimination to those who reported high levels of discrimination. Participants who reported experiencing high levels of discrimination were four times more likely to report

a lifetime auditory hallucination, approximately three times more likely to report a lifetime visual hallucination, and over four times more likely to report a lifetime delusion. This study found perceiving discrimination at moderate to high levels predicts psychotic events in a linear dose-response fashion (Oh, 2015).

The results are mixed when examining studies that associate Post-Traumatic Stress Disorder (PTSD) with everyday discrimination. One study examining Bosnian refugee adults showed no relationship between discrimination and PTSD, however a positive relationship was found in a study examining Somali refugee adolescents (Ellis et al., 2010; Sinkale, 2008).

Physical Health

Six articles report on the link between everyday discrimination and poorer physical health (Yoshihama, Bybee, & Blazevski, 2012; LeBron et al., 2014; Nadimpalli, Dulin-Keita, & Salas, 2016; Shah, 2004; Ro & Bostean, 2015; Moody et al., 2018). All but one study found a significant relationship between the two factors (Nadimpalli, Dulin-Keita, & Salas, 2016).

In a study examining day-to-day discrimination and general health in Asian Indians a significant association was found for men only. It is important to note that men also reported higher levels of discrimination compared to their female counterparts. Women in this study did not have any adverse health correlated with discrimination but did have significantly higher levels of lowered emotional well-being. One possible explanation for the gender differences may be that day-to-day discrimination affects

people differently across various aspects of wellbeing (Yoshihama, Bybee, & Blazevski, 2012).

Another study investigated the association between discrimination and elevated diabetes-related distress in Latino and African-American populations. A significant relationship between perceived discrimination and diabetes-related stress disorder was found in the Latino study population ($b = 1.58$, 95 % CI 1.08, 2.31, $p < 0.05$), but not the African American population ($b = 0.96$, 95 % CI 0.59, 1.57). Both African Americans and Latinos with a diabetic experience had a higher prevalence of perceived discrimination. Although Latino participants reported less discriminatory experiences, the exposure to discrimination was associated with increased diabetes-related stress disorder (Ro & Bostean, 2015). While this study does not show a causative link, the findings illustrate a need for stressors unique to minority populations to be addressed in order to improve diabetes related outcomes. These findings suggest the need to address stressors unique to racial/ethnic minorities to improve diabetes-related outcomes (Lebron et al., 2014).

Another study examined a different aspect of physical health and hypothesized that experiences of discrimination would be associated with negative cardiovascular health in Asian Indians. The study used the measures of body mass index, total cholesterol, systolic blood pressure, and fasting glucose. No relationship was found between discrimination and cardiovascular health (Nadimpalli, Dulin-Keita, & Salas, 2016).

Language

When discussing everyday discrimination most studies focus on ethnic or racial discrimination. Only three studies examined the role of language based on perceived discrimination (Halim, Moy, & Yoshikawa, 2017; Li, 2014; Zhang et al., 2012). A study by Halim, Moy, & Yoshikawa (2017) investigated whether language and ethnic based everyday discrimination were associated with adverse mental and physical health conditions. This study included Dominican and Mexican immigrant women, both ethnic and language based perceived discrimination predicted detrimental psychological and physical health (Halim, Moy, & Yoshikawa, 2017).

Li (2004) examined the effects of perceived language based discrimination in Asian participants, and various subgroups were analyzed separately and results varied by subgroup. The Filipino group had the highest level of perceived racial discrimination yet the lowest level of perceived language discrimination. Chinese participants had the highest rate of both perceived language and racial discrimination. While Vietnamese participants were the least likely to report racial discrimination. Perceived language discrimination was only a risk factor for Filipino mental health, while Chinese and Vietnamese are not affected by perceived language discrimination, solidifying that each subgroup must be assessed and understood separately (Li, 2014).

Acculturation

While acculturation was hypothesized to have a relationship with everyday discrimination the existing studies have mixed outcomes. When analyzed separately, both

acculturation and discrimination have a negative effect on self-perception, mental and physical health.

One study with a sample of Dominican women examined the relationship between acculturation and discrimination. The results showed a positive relationship between everyday discrimination and stress levels. The study also found low acculturation to be a moderating factor that had significant impact on the stress levels of Dominican women ($\beta = 1.05, p < .05$). This suggests that greater adherence to Latino culture could moderate the adverse effect of discriminatory experiences for Dominican women (Dawson, 2009).

In a study examining Jewish young adults, no significant main or moderator effects were found for acculturative stress and discrimination. Although this finding could be predicated on the study sample residing in the United States for over half their lives. Acculturative hassles can occur at any time point for immigrants, however studies usually look into the first few years after arrival. Therefore these results should be cautiously considered due to the population sample (Roytburd & Friedlander, 2008).

Ethnic Identity

While most articles on everyday discrimination include a racial point of view, articles that examine ethnic identity and its association with perceived discrimination are rare. Ethnicity is a sociological construct in which one is able to self-identify while race is a biological-based construct in which society places one in a category. Ethnic identity is usually seen as a protective factor for minority groups however the relationship between ethnic identity and perceived discrimination is complex (Cobb, 2017).

In a study examining Asian Indians, Vietnamese, Salvadorans, Mexicans, and Nigerians, the results of perceived discrimination varied considerably based on ethnic identity, gender, and authorization status. Although both Mexican and Nigerian men and women experienced everyday discrimination, both Mexican men and women had a higher rate of perceived discrimination than Nigerian men. Mexican participants viewed discrimination as an issue regardless of citizenship status. Fewer Vietnamese and Salvadorans viewed discrimination as an issue (Brettell, 2011).

A study conducted by Cobb et al., (2017) with Latino men and women found ethnic identity was positively correlated to everyday discrimination and everyday discrimination was associated with depression. The analysis also revealed everyday discrimination as a mediator between ethnic identity and depression. This finding suggests ethnic identity may be a risk factor instead of a protective factor (Cobb et al., 2017).

Discussion

This literature review contains information on research conducted on experiences of everyday discrimination in immigrant and refugee populations. The expansive search only revealed 25 articles with empirical research on perceived discrimination and immigrant and refugee populations meet the inclusion criteria.

The majority of the authors of the included studies discuss the association between everyday discrimination and mental and emotional health, acculturation, and ethnic identity. Although these areas are understudied some inferences can be drawn. Other areas of interest populated in this review include physical health and language,

however information gathered on these topics should be used with caution because of the paucity of research in these domains.

The study of perceived discrimination in immigrant and refugee populations is a relatively new field. Twenty-one (84%) of the included studies were published within the last six years (since 2012).

Population Groups

The studies included in this review are heavily weighted toward immigrant and refugees of Asian and Latino descent. Less than half (12) of the included studies compared multiple minority groups. Only four studies were conducted on Africans, two studies included Arabs, one study examined people of Jew descent, and one study examined Russians.

The lack of studies examining African and Arab immigrant and refugees should be addressed. African-American discriminatory experience differs from that of African immigrants and refugees despite the two populations sharing the same race and being in the same country. Perceptions and adverse outcomes of discrimination greatly differ between the two groups (Anglin et al., 2014). The Arab immigrant population is one of the fastest growing populations in the United States and surprisingly only two studies include this demographic. In a study by Hadley and Patil (2009), Arab immigrants perceived less discrimination than African immigrants. Two aspects of acculturation, religious affiliation and ethnic identity were shown to be protective against perceived discrimination (Awad, 2010). The literature that examines discrimination in Arab immigrants includes them with a study population that consist of multiple minority

groups. Although immigrants and refugees share the commonality of migrating from a home country and now living in the United States, stark differences exist between immigrant and refugee groups. One study examined Asian immigrants and found differences in perceptions of discrimination when comparing individuals from differing ethnic backgrounds (Li, 2014). More studies examining various groups are needed to draw inferences from this research topic and to create culturally appropriate interventions.

Limited Age Groups

The studies included in this literature review are strongly skewed towards adult populations. Only four studies included participants under the age of 18 and none of the integrated studies included children under the age of 10 (Ellis et al., 2010; Morozov, 2010; Roytburd & Friedman 2008; Shah et al., 2004). The studies including adolescents illustrated that perceived discrimination was associated with more pronounced mental health outcomes in Somali refugees, and this effect was moderated by acculturation (Ellis et al., 2010). Another study looking at Soviet Jewish refugees found acculturation to be associated with higher levels of perceived discrimination (Roytburd & Friedman 2008).

Measures of Discrimination

All but three studies used the Everyday Discrimination Scale (EDS) or an adapted version of the EDS, a scale developed from Williams et al. in a Detroit Area Study. The scale is known to assess the occurrence and frequency of interpersonal discrimination that can occur in daily life (William et al., 1997). This is a general survey of discrimination that allows participants to indicate the reason a discriminatory event may have occurred.

Other surveys used included the Acculturative Hassles Scale and the Majority-Minority Relations Survey.

The Everyday Discrimination Scale was created using an adult population and the majority of studies used the full or modified version of the EDS on adult participants. Only three studies used the EDS on participants under the age of 18. The existing studies show that adolescents experience everyday discrimination and moderating variables such as ethnic identity and acculturation can affect the immigrant and refugee perceptions (Ellis et al., 2010; Morozov, 2010; Roytburd & Friedman 2008). Due to the limited number of studies conducted on children and adolescents, validity and reliability concerns exist for this population.

Conclusion

Perceived everyday discrimination is associated with negative physical and mental health. Most studies concerning everyday discrimination have been conducted in adult, African American populations, with few studies investigating other minority groups, particularly immigrant and refugee populations. The existing literature shows reports of perceived discrimination in refugee and immigrant populations and an association with negative physical and mental health outcomes. Many studies focus on psychological aspects of health associated with perceived discrimination. Existing literature supports the connection of perceived discrimination with anxiety, depression, and life satisfaction among immigrants and refugees. While most studies support the assertion that perceived discrimination is associated with anxiety and depression a few studies did not support this finding. Future studies should examine the resiliency factors

and coping skills exhibited by populations not negatively affected by the ill mental health effects of everyday discrimination.

Studies investigating the correlation between physical health and discrimination showed a definite association. Many studies focused on psych-social phenomenon often focus on associations with mental health outcomes but more research shows that these experiences, discrimination in particular, may impact physiological health outcomes. Language-based perceived discrimination is a research area that lacks needed content.

The few studies that examined this type of discrimination found an association between language proficiency and perceptions of discrimination. Acculturation and ethnic identity were both hypothesized to have an effect on perceived discrimination but results were mixed and the proposed relationship is complicated. Both acculturation and ethnic identity can serve as protective factors however in the aforementioned studies both are associated with increased perceived discrimination.

More research examining everyday discrimination among immigrant and refugee populations is necessary due to variations between different racial and ethnic groups, ages, gender and English language proficiency. Most of the existing research shows differences in perceptions of discrimination as well as health outcomes depending on country of origin, gender, and/or age. Expanding this area of literature will better inform researchers on how to develop interventions to build coping skills and resiliency in immigrant and refugee populations.

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CHAPTER III: Psychometric Properties of the Everyday Discrimination Scale in Adolescent Immigrant and Refugee Youth

Introduction

Discrimination has been measured in numerous ways using multiple scales that capture information based on interpersonal interactions to more institutionally rooted systemic practices (Atkins, 2014). Most scales that measure the concept of discrimination actually measure racial or gender discrimination, although discrimination can be predicted using many factors including but not limited to race, religion, gender, language, country of origin, sexual preference, etc. Discriminatory stressors associated with immigrant and refugee experiences are usually explained in terms of major or trauma related experiences of discrimination, however the pervasive and cumulative nature of everyday discriminatory experiences are associated with adverse health outcomes (Williams DR, Yu Y, Jackson JS, et al., 1997).

Research measuring perceived discrimination is usually skewed towards the African American population, however other minority groups such as immigrants and refugees are likely to face discrimination as well. The little research existing on the topic of perceived discrimination in immigrant and refugees is usually concerning racial discrimination. Articles addressing generalized discrimination are scarce and are normally limited to Asian and Hispanic populations.

Research on everyday discrimination in immigrant and refugee populations under the age of eighteen is severely lacking. Most minority adolescents report experiencing

some type of discrimination and are aware of its influence in their daily lives (Spears, Brown, & Bigler 2005).

The Everyday Discrimination Scale (EDS) has been validated in several minority populations including African Americans, Asian Americans, Hispanics, Chinese Americans and Vietnamese Americans, and Caucasians (Chan et al., 2012, Lewis et al., 2012). The EDS is not specifically tailored to one dimension of discrimination like race or religion, it is generically framed and used to assess perceptions of discrimination of individuals of diverse racial backgrounds (Barnes et al., 2008; Friedman et al., 2009; Hunte & William, 2009). Although this scale has been used in racially diverse populations, the scale was created using qualitative data from interviews with African American women and black women in the Netherlands (Essed, 1990, 1991). Therefore the results from using this scale in populations with racial backgrounds other than African-American should be considered with caution. More studies are needed to validate the use of this tool in different racial/ethnic populations.

Item Response Theory

Item Response Theory (IRT) connects observed test responses to a survey/test participants' unmeasured underlying ("latent") trait (Mellenbergh, 1994). IRT has an item-level focus in contrast with Classical Test Theory (CTT) which has a test-level focus. In an IRT analysis the standard error of measurement varies depending on the latent trait score analysis a person's latent score and person-by-item interaction (Oishi 2006). IRT analyses are more advantageous than CTT analyses due to its item level focus and strong assumptions that allow greater generalizability. This difference gives a major

advantage to IRT over CTT in respect to validity and reliability estimates. In other words, IRT analyses are considered to be more precise because it varies across the continuum, unlike CTT models that are based on the test as a whole. Also, CTT item parameters are sample-specific, while IRT parameters are not sample dependent. The score computed in IRT can be compared across different test forms, resulting in IRT parameters having a larger degree of generalizability than classical item parameters (Oishi, 2006).

The most commonly used IRT models are the one, two, and three parameter logistic models which have the ability to estimate item parameters for both dichotomous and polytomous scored items. For dichotomous items the one parameter logistic model is appropriate. This model is popular in analyzing educational assessments. The *b-parameter* is used in the one parameter logistic model to estimate the level of latent trait present at the .50 probability of a correct answer. In the one-parameter logistic model the level of latent trait and item difficulty is determined by answering an item correctly (Bowman, 2014).

While the one-parameter logistic model focuses on item discrimination and is assumed to be fixed, both the two and three parameter logistic models estimate item discrimination as well as item difficulty. The *a-parameter* is used in two and three parameter logistic models to determine item discrimination, with higher estimates of item discrimination being represented by a steeper information curve (Bowman, 2014). The one-parameter logistic model uses the *b-parameter* to measure item difficulty. The *b-parameter* is an estimate of the latent trait at the .50 probability of a correct response. This relationship is represented by an item response curve, where the probability of a

correct response increases as the latent trait increases, as seen in Figure B1 (Hambleton et al., 1991).

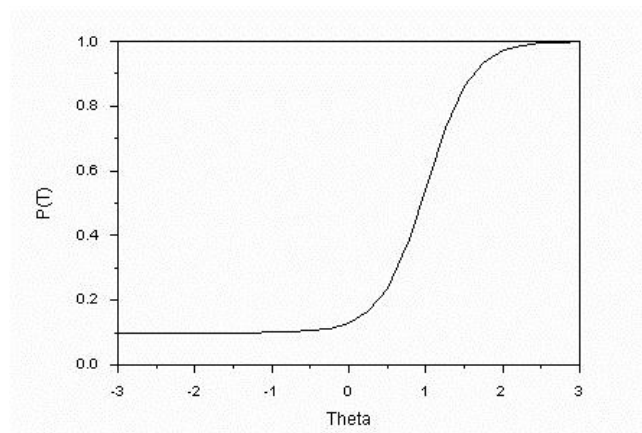


Figure B1. Example of an item characteristic curve where the .50 probability of a correct response is at $\theta = 1.0$.

Unlike educational assessments, social and behavioral instruments are commonly scored using polytomous scoring. Instead of using the probability of selecting a correct response like in dichotomous IRT, polytomous IRT models use a series of boundary location parameters that estimate the probability of reaching response category threshold (Embretson & Reise, 2000). The *b-parameter* is now represented by an item characteristic curve where the .50 probability of moving to the next category is represented by the intersection point of the item characteristic curves (see example Figure B2).

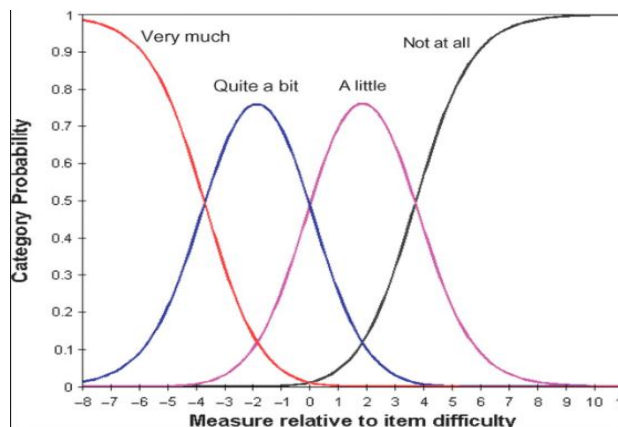


Figure B2. Example of an item characteristic curve where the .50 probability of a moving to the next response category at the curve intersection points (Baylor et al., 2011).

Purpose of Current Study

The Everyday Discrimination Scale (EDS) is a widely used scale in public health research, however few studies have examined the scale's psychometric properties (Paradies, 2006; Panter et al., 2008). The studies that have examined the psychometric properties of the EDS mainly examine the internal consistency coefficients, typically with an alpha of .88 (Stucky et al., 2011). Despite the wide use of the EDS, only two studies have performed a detailed item analysis on the EDS (Stucky et al., 2011; Lewis et al., 2012). One study examined the psychometric properties of the EDS in African-American law students and recommended a shortened revised EDS to be used due to a violation of the assumption of local independence and also cautioned that this result may not be generalized to other populations (Stucky et al., 2011). Local dependence occurs when items are correlated with each other and this can inflate reliability measurements. Another study examined the psychometric properties of the EDS in middle aged women

in the United States of various racial backgrounds (African-American, Caucasian, Chinese, Hispanic, and Japanese) and found the concept of everyday discrimination functioned differently for women depending on their racial/ethnic background (Lewis et al., 2012). Other studies using the Everyday Discrimination Scale scored the scale by using the original 6 response categories or by dichotomizing the response categories. No analysis of psychometric properties has been conducted in existing literature to justify dichotomizing response categories. One justification for creating dichotomous response categories states that not enough survey participants selected frequent occurrences of perceived discrimination so categories were collapsed into *ever experienced discrimination* or *never experience discrimination* (Hadley & Patil, 2009; Perez, Fortuna, & Alegria, 2008).

The current study will add to the existing literature by performing an item response analysis on an adolescent immigrant and refugee population to examine the extent to which items measure the latent trait of everyday discrimination. This study will also examine boundary location estimates to determine if any adjustments to category responses are necessary.

Methods

Participants

Data were collected as a part of a larger study examining the challenges and barriers to higher education for immigrant and refugee adolescents in Middle Tennessee. The study is ongoing and has IRB approval. Participants were recruited through a

convenience sample from a high school in Middle Tennessee. The participants consist of immigrant and refugee English Language Learners (ELL) students who attended a high school in Middle Tennessee and who opted to participate in the study. A written consent form was given to minor participants and their caregivers. The consent form was verbally explained to the participant and questions were answered before the survey was administered. Each participant was informed that all information and responses would be confidential, participation was voluntary and the participant could refuse to answer any questions or stop the survey at any time.

Demographics

The demographics portion of the survey was completed by an English Language Learner (ELL) instructor employed by the school district. Information requested included native language, gender, age, grade level, United States date of entry, and ACCESS scores. Demographic questions can be seen in Appendix B.

Data were collected from 160 participants recruited from a Middle Tennessee high school. Demographic information was provided by an (ELL) instructor. Forty-five percent (45%) of participants were identified as female and 55% were male. All participants were between the ages of 14 to 20 years old ($M= 16.2$), with 30% classified as 9th graders, 31.9% as 10th graders, 22.5% as 11th graders, and 15.6 as 12 graders. Participants were divided into categories based on native language spoken, 47.5% were native Spanish speakers, 25.6% native Karen speakers, 23.8 native Arabic speakers, and the remaining 3.1% of participants were native speakers of languages not listed above.

Everyday Discrimination Scale

The Everyday Discrimination Scale (EDS) was developed as part of the Detroit Area Study Discrimination Questionnaire in order to address acute but chronic forms of discrimination. The creation of the EDS survey items is primarily based on qualitative data from interviews with African-American women in the United States and black women in the Netherlands (Essed, 1990, 1991). The EDS measures perceived discrimination, perceptions of routine discrimination over the course of a persons' lifetime (Williams et al., 1997).

The EDS ask the following questions, "In your day-to-day life, how often have any of the following things happened to you:

1. You are treated with less courtesy than other people are
2. You are treated with less respect than other people are
3. You receive poorer service than other people at restaurants or stores
4. People act as if they think you are not smart
5. People act as if they are afraid of you
6. People act as if they think you are dishonest
7. People act as if they're better than you are
8. You are called names or insulted

9. You are threatened or harassed

Next, the participants were asked to give the frequency of nine discriminatory events using following responses: almost everyday, at least once a week, a few times a month, a few times a year, less than once a year, or never. Participants can then indicate the main reason they believed the discriminatory experiences occurred by selecting from a fixed list of attributions, including ancestry/national origin/ethnicity, gender/sex, race, age, height/weight, skin color, and other.

Data Analysis

Internal consistency was calculated using coefficient alpha. An exploratory factor analysis was conducted to determine unidimensionality of the Everyday Discrimination Scale. An eigenvalue of greater than 1.4 was used to determine a factor loading cut off score (Smith & Miao, 1990).

The EDS was analyzed using item response theory (IRT), by means of the Samejima's Graded Response Model (SGRM) (Samejima, 1969). Chi-square alone is not the best measure to use when using SGRM because of chi-square's sensitivity to sample size. The best measure for measuring a latent trait using SGRM is chi-square/df ratio because it reduces sensitivity to sample size (Chernyshenko, Stark, Chan, Drasgow, & Williams, 2001).

To determine how well each item discriminates across category responses, each category response function was examined. Boundary location parameters (*b-parameter*) assess the level of latent trait required to meet threshold. Quality category responses have

distinct boundaries indicating the items are providing unique information. The *a-parameter* indicates the steepness of the item response function at an item's location and shows how related the item is to the latent trait of perceived discrimination. A higher *a-parameter* score illustrates the items ability to discriminate between levels of perceived discrimination.

Results

Exploratory Factor Analysis and Classical Test Theory

An exploratory factor analysis (EFA) and Cronbach's alpha (α) were conducted using IBM SPSS v23 to determine the structure and internal consistency of the Everyday Discrimination Scale on a sample of 160 participants. To explore internal consistency of the 9-item scale, Cronbach's alpha coefficient was calculated. The alpha coefficient for the sample was .82 with item total correlations ranging from .43 to .60.

An EFA with maximum likelihood estimation and Promax rotation reported a Kaiser-Meyer-Olkin measure of sampling adequacy of .81. The Bartlett's test of sphericity was significant, $\chi^2(36) = 285.94, p < .001$, indicating the assumptions for the factor analysis were satisfied. The eigenvalues and scree plot revealed that one factor explained 40.6% of the variance. A one-factor solution, was determined to be most appropriate based on eigenvalues and scree plot. All nine items met the factor loading cut-off of .32, and were retained.

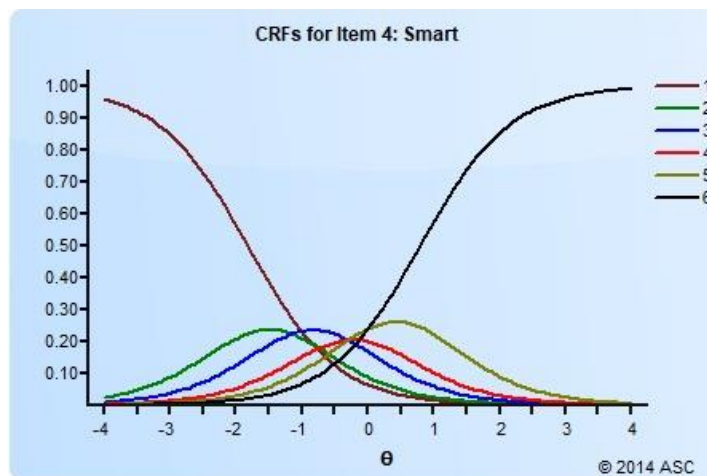
IRT Results

When using six response categories, the nine item Everyday Discrimination scale did not provide unique information so the 6 response categories were collapsed into 3 response categories (see Figure B3). Collapsing low response adjacent categories of polytomous IRT models is not expected to have a negative effect on the information provided by items (Lecointe, 1995; Linacre, 2004; Bond & Fox 2001). Responses on items that were previously scored on a six response categories were combined such that category 1 included response categories “Almost everyday, At least once a week, and A few times a month,” category 2 included response categories “A few times a year and Less than once a year,” and category 3 included response category “Never.”

Items were analyzed using Xcalibre v4.2 (Assessment Systems Corporation, 2014). The Samejima’s Graded Response Model (SGRM) was determined to be the best model. The overall fit of the SGRM was [χ^2 (243.724, N = 160) = 2198, $p < .001$; $\chi^2/df = 1.00$]. As revealed by the Test Information Function (Figure B4) and the distribution of theta estimates (Figure B5), the scale performed best at a theta range of -2.4 to 2.0 with maximum information (5.11) provided at $\theta = -0.40$. The results indicated that items performed moderately well across a range of the latent trait.

For each scale item, the model fit, a-parameter, boundary locations (*b-parameter*), item information function (IIF), and category response function (CRF) were examined to determine if the item provided sufficient information across a range of the latent trait and discriminated between those with higher versus lower levels of perceived discrimination.

Examples of an IIF and CRF from a moderate and a high item from the 9-item Everyday Discrimination Scale can be seen in Appendix A (Figures B6 and B7). According to the *a-parameter* cut of below .32, all 9 items had moderate to high information function and no items were candidates for removal (Table A1). The overall analysis suggests all 9 items provide information at a range of the latent trait, perceived discrimination, and discriminate moderately well between those who selected low versus high response categories. Model fit indices and item parameters can be seen in Table A2.



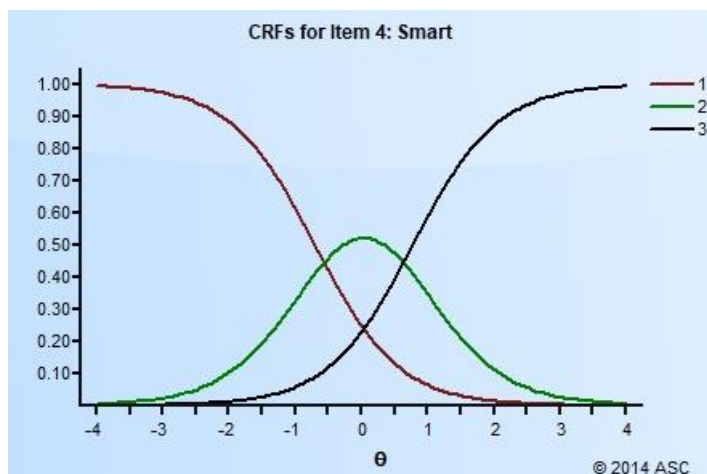


Figure B3. The upper graph shows scale item 4 with six overlapping response categories overlapping indicating undefined boundary locations. The lower graph shows scale item 4 with three mildly overlapping response categories indicating more defined boundary locations.

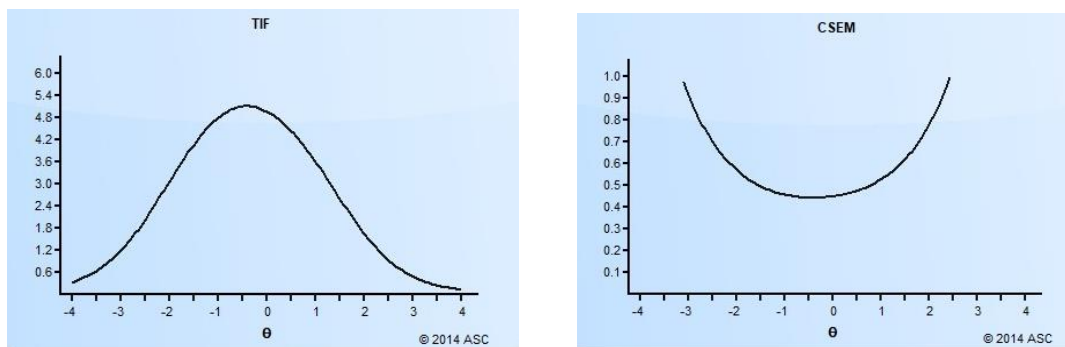


Figure B4. Test information function and the associated standard error of measurement showing the range of theta producing the most information.

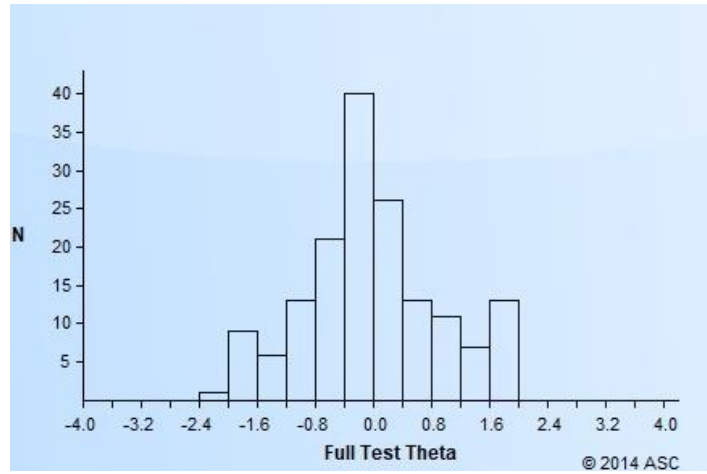


Figure B5. Sampling distribution for observed theta estimates

Table A1
Item level descriptive statistics, item-total correlations, communalities, and factor loading pattern for the Everyday Discrimination Scale: N = 160

Item	<i>M</i>	<i>SD</i>	Corrected Item-Total Corr.	α If Item Removed	λ^2
EDS	16.58	4.52			
1	1.99	0.81	.53	.79	.36
2	1.94	0.82	.57	.79	.38
3	1.59	0.79	.49	.80	.33
4	2.03	0.79	.57	.79	.38
5	1.65	0.80	.43	.81	.24
6	1.77	0.80	.45	.80	.25
7	2.41	0.77	.60	.79	.48
8	1.84	0.82	.50	.80	.29
9	1.42	0.67	.48	.80	.27

Note: λ^2 = Communality

Table A2
*Item fit indices, a-parameter, and boundary location parameters for the
 Everyday Discrimination Scale*

Item	χ^2/df	<i>a</i> -parameter	<i>b</i> 1	<i>b</i> 2	Θ for IIF	Level of Information
1	1.30	0.67 (0.13)	-0.89 (0.13)	0.78 (0.13)	-2.5 – 2.5	moderate
2	0.90	0.85 (0.16)	-0.83 (0.25)	0.53 (0.12)	-2.5 – 2.0	high
3	0.93	0.78 (0.16)	-1.45 (0.15)	-0.38 (0.12)	-3.0 – 1.5	moderate
4	1.36	0.92 (0.17)	-0.70 (0.22)	0.78 (0.13)	-2.0 – 2.5	high
5	1.15	0.83 (0.17)	-1.32 (0.14)	-0.25 (0.11)	-3.0 – 1.5	moderate
6	0.85	0.86 (0.16)	-1.17 (0.14)	0.16 (0.12)	-3.0 – 2.0	high
7	1.05	0.99 (0.19)	-0.23 (0.11)	1.37 (0.14)	-1.5 – 3.0	high
8	1.02	0.83 (0.16)	-1.06 (0.14)	0.28 (0.12)	-2.5 – 2.0	moderate
9	0.46	0.96 (0.19)	-1.98 (0.18)	-0.73 (0.11)	-4.0 – 1.0	high

Note: *b* = boundary location estimate.

Discussion

Early studies on stress often underreport the levels of stress in minority populations due to the development of scales using mainly white populations. The early stress researcher did not account for the effect of discrimination on levels of stress. Perceived discrimination is a stressor that can cause ill-health effects in people. Visible minority experiences are subject to chronic and acute perceived discrimination. Chronic perceived discrimination is correlated with negative health outcomes (Pascoe & Richman, 2009).

Most studies on perceived discrimination examine African Americans with few studies on refugee and immigrant populations. Validation studies using refugee and immigrant populations are lacking, especially studies using Item Response Theory versus classical test theory. Item Response Theory analyses are useful in examining each item within a test/survey instead of examining the test/survey as a whole. To our knowledge no studies using an IRT analysis on the Everyday Discrimination Scale in immigrant and refugee adolescents exist.

Everyday discrimination is described as “daily hassles” or microaggressions, which can be intentional or unintentional brief verbal, behavioral or environmental indignities that communicate hostile, demeaning, or negative slights and insults towards an individual belonging you a visible minority population (Pierce, 1970). These experiences can have an adverse impact on psychological and physiological health. The Everyday Discrimination Scale was created to assess chronic lifetime experiences of perceived discrimination. Existing literature mainly uses African American adults as the

study population but experiences of everyday discrimination impact other age and minority groups including immigrants and refugees. More focus should be placed on the experiences of everyday discrimination in children and adolescents due to the majority of adolescents, belonging to a minority group, experiencing some type of discrimination and being aware of its influence in their daily lives (Spears, Brown, & Bigler, 2005). Despite the impact of perceived discrimination on adverse health outcomes, few studies exist that validate the psychometric properties of the EDS.

The current study used both Classical Test Theory as well as Item Response Theory analyses to examine the extent to which the Everyday Discrimination Scale measured the latent trait of perceived discrimination and the ability to discriminate between varying levels of perceived discrimination. Internal consistency, measured by Cronbach's alpha, was above the cut-off point of .60.

The exploratory factor analysis revealed the 9-item survey is grouped into one-factor which research suggests are related to perceived discrimination (William et al., 1997). All items had sufficient loading, and no candidates for removal were found.

Examination of *a-parameters* revealed moderate to high information functions, however overlapping category response functions revealed that response categories were not providing unique information on varying levels of perceived discrimination. In order to resolve this issue, six response categories were collapsed into three response categories and resulted in less overlap allowing for more discrimination between categories. This illustrates the Everyday Discrimination Scale functions best with three response categories within the study population. Prior researchers that have examined the

prevalence of Everyday Discrimination often dichotomize response categories due to a low frequency of respondents selecting frequent experiences of discrimination (Hadley & Patil, 2009; Perez, Fortuna, & Alegria, 2008). The current study may be the first to justify collapsing categories of the Everyday Discrimination scale using results of an Item Response Theory analysis. Collapsing into 3 response categories instead of dichotomizing the response categories provides a wider range of information on the level of perceived discrimination experienced by respondents.

The Item Response Theory analysis illustrates high functioning of the Everyday Discrimination Scale in the specific population of adolescent immigrant and refugee students. While the results of the analyses support the use of the scale in the specific population, several limitations exist. The current study used a convenience sample in a secondary school setting. Also due to a small sample size, subgroup analyses were not explored in the current study. A larger sample should be considered for future research in order to generalize the current findings. These limitations notwithstanding, the results of this examination may have implications for future investigations examining the relationship between perceived discrimination and other indices of health in immigrant and refugee adolescents.

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APPENDIX A: TABLES AND FIGURES

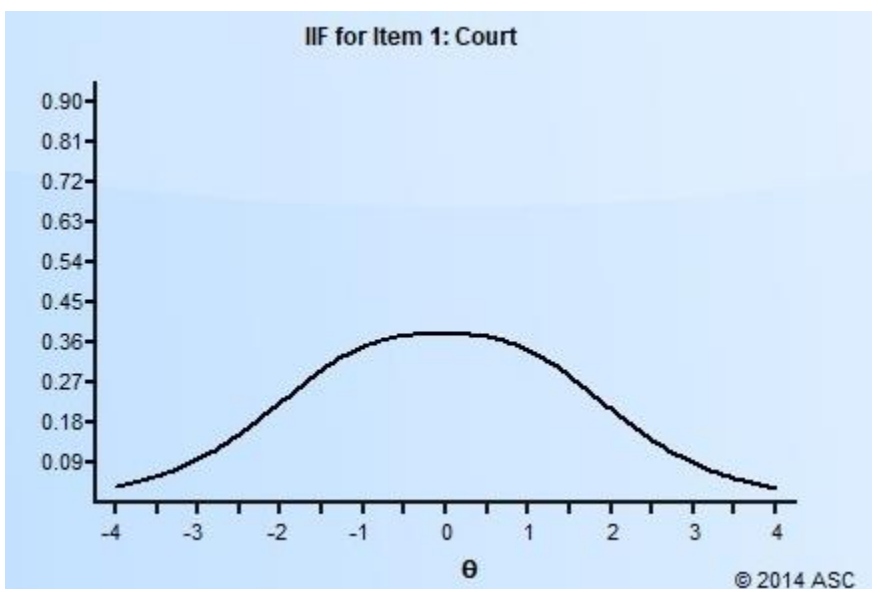
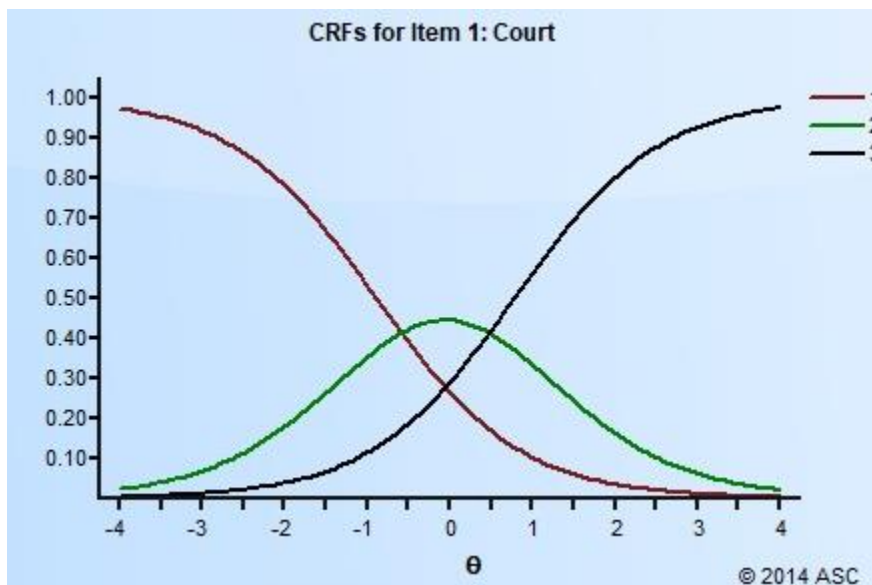


Figure A6. Category response function for moderately performing item 1 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2.5 to 2.5 on the latent trait scale

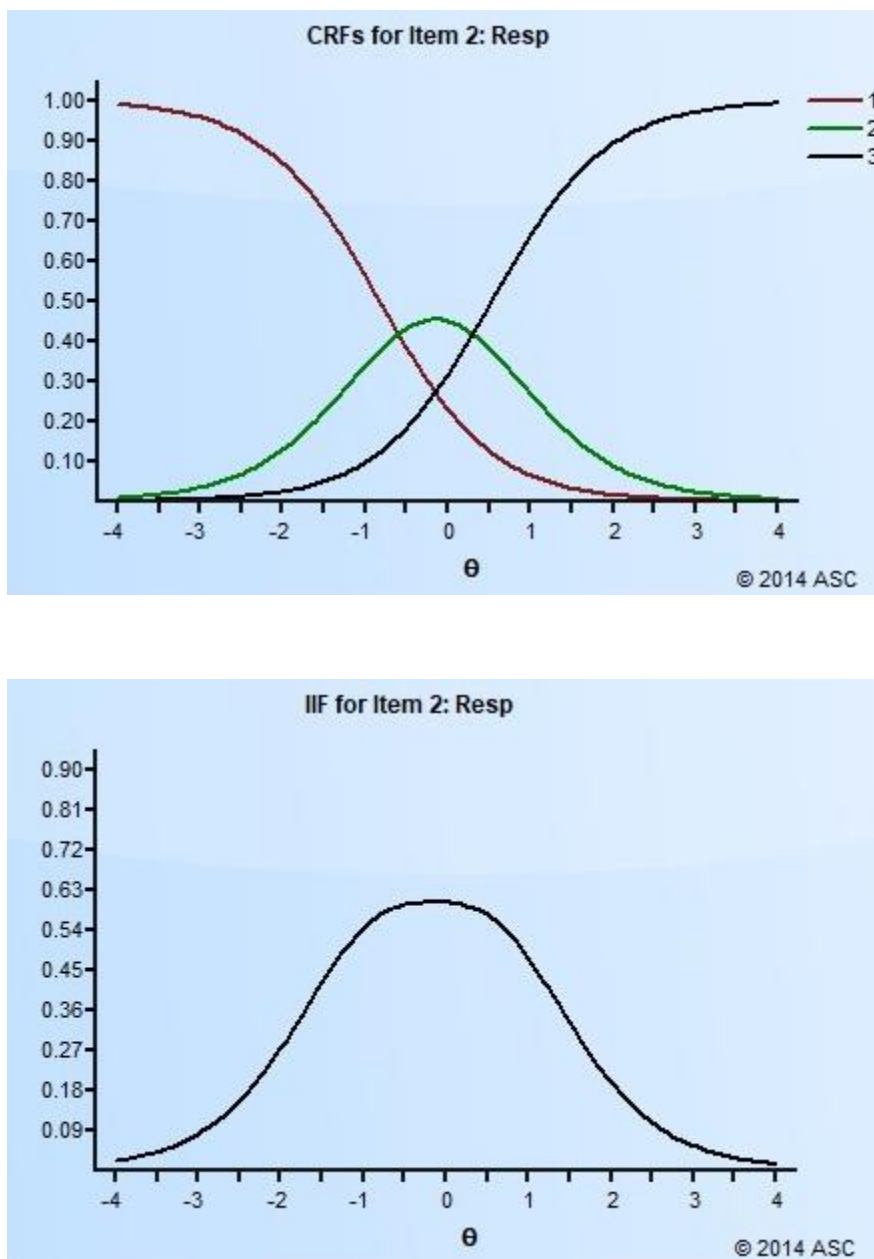


Figure A7. Category response function for high performing item 2 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2.5 to 2 on the latent trait scale

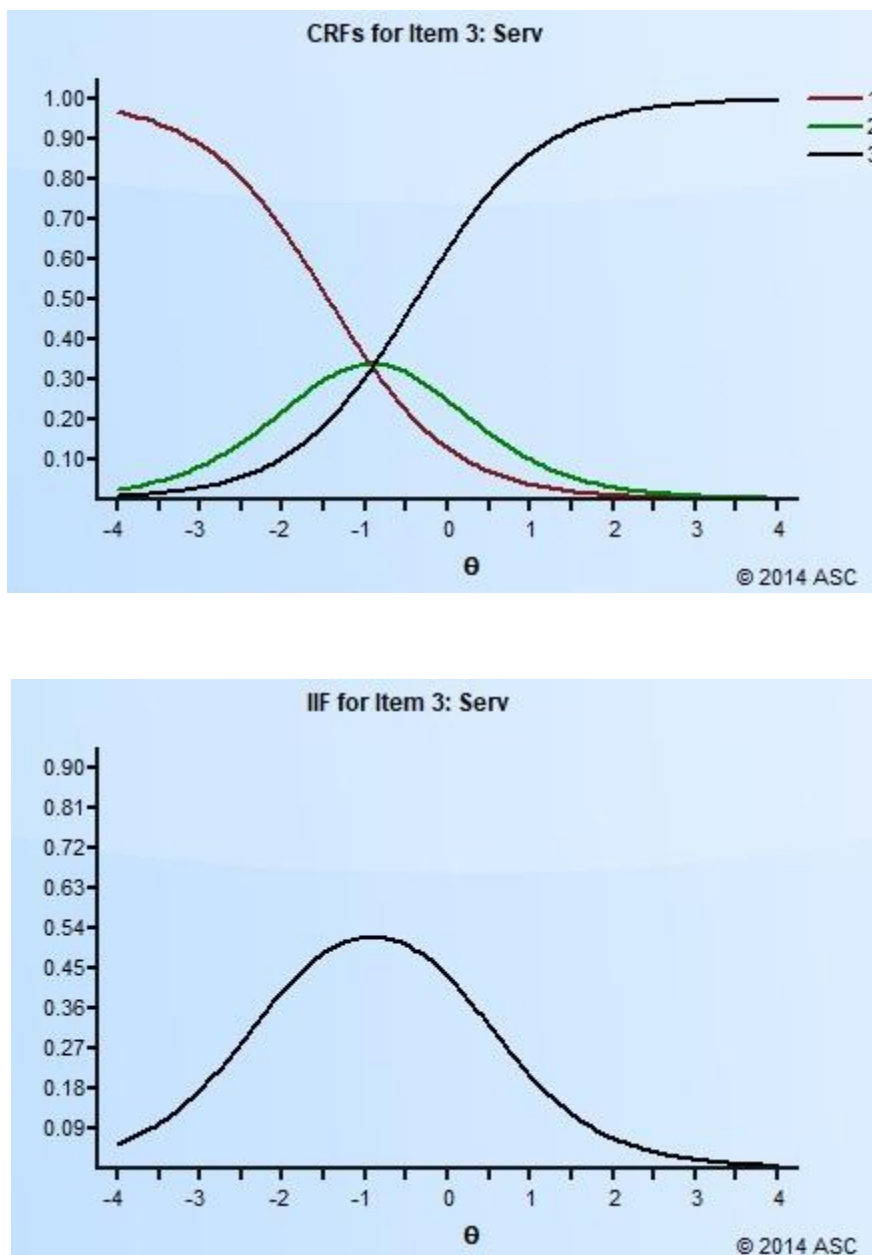


Figure A7. Category response function for moderately performing item 3 of the Everyday Discrimination Scale, with overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -3 to 1.5 on the latent trait scale.

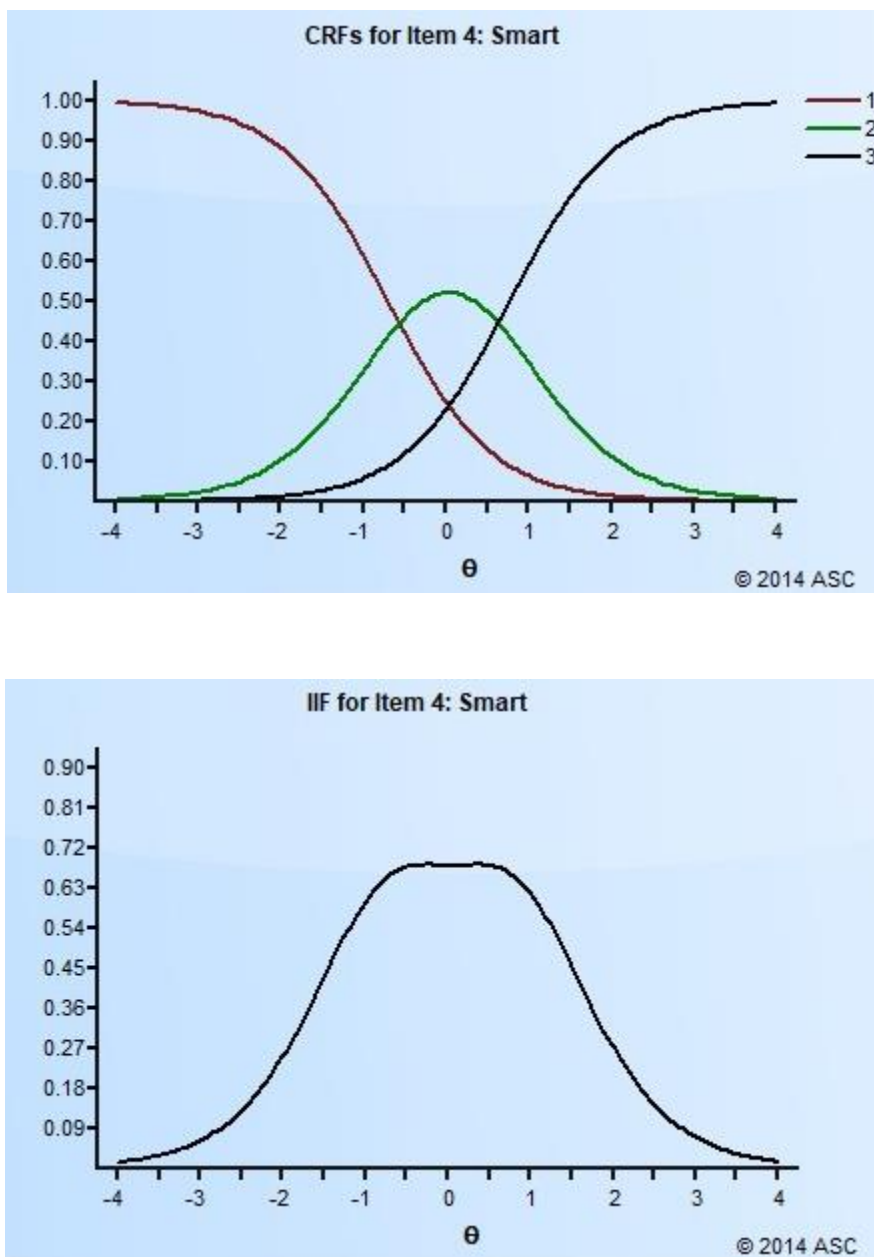


Figure A8. Category response function for high performing item 4 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2 to 2.5 on the latent trait scale.

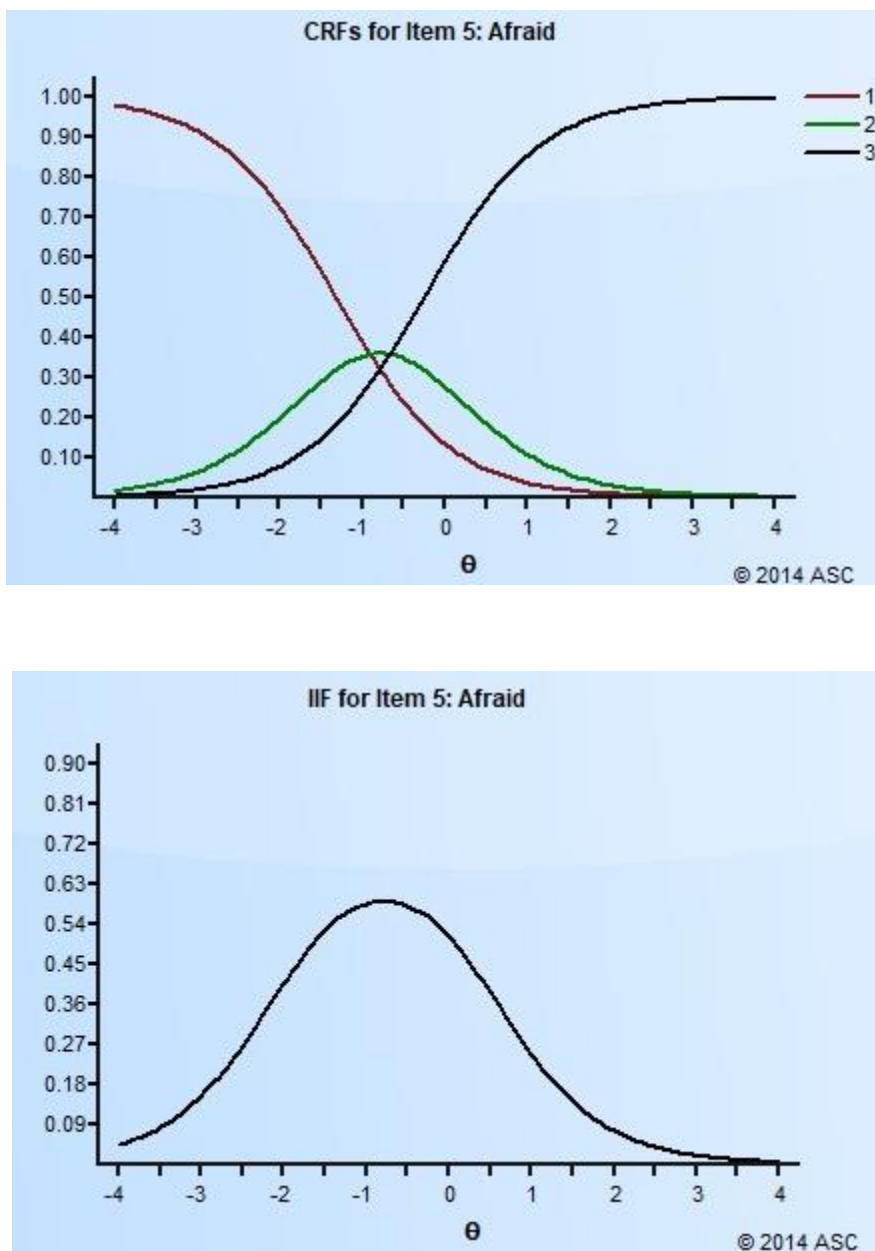


Figure A9. Category response function for moderately performing item 5 of the Everyday Discrimination Scale, with overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -3.0 to 1.5 on the latent trait scale.

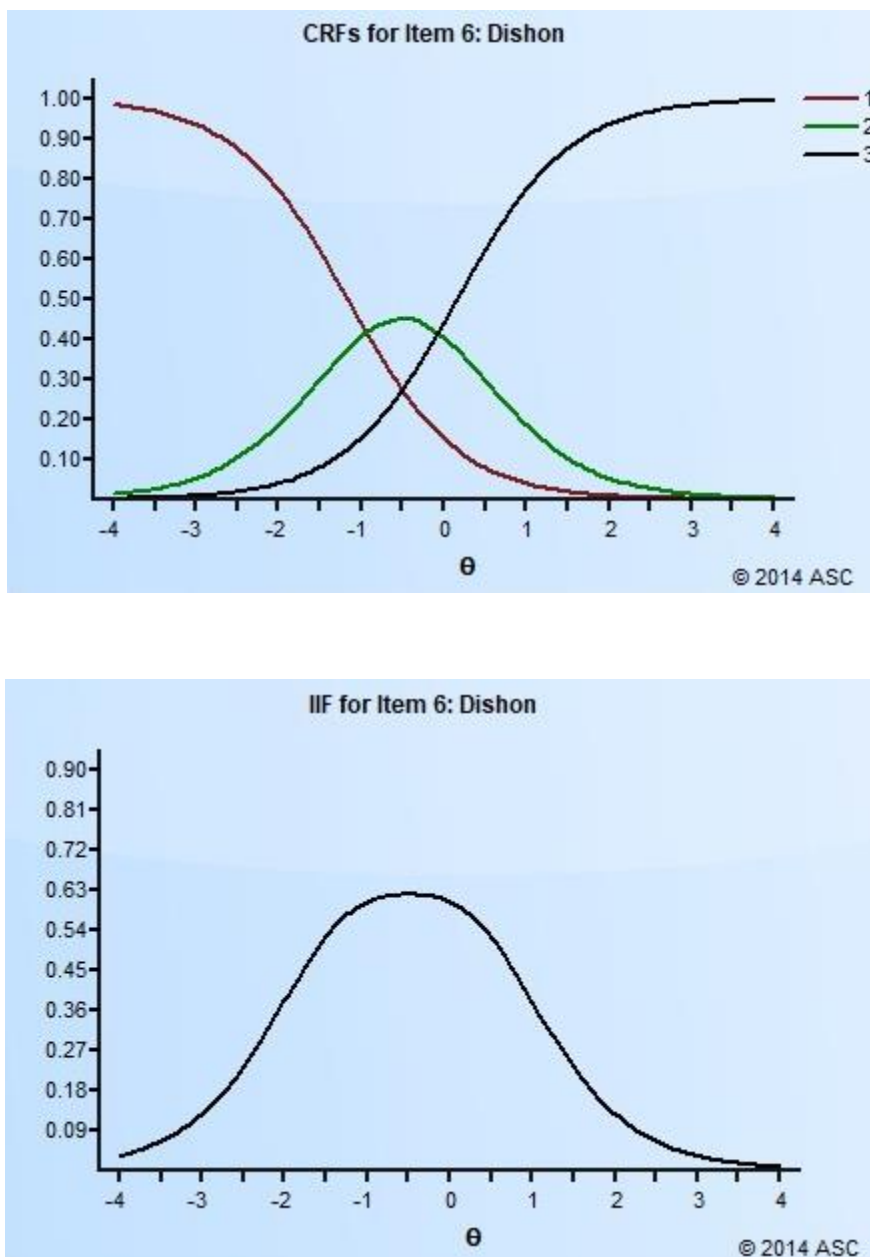


Figure A10. Category response function for moderately performing item 6 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -3 to 2 on the latent trait scale.

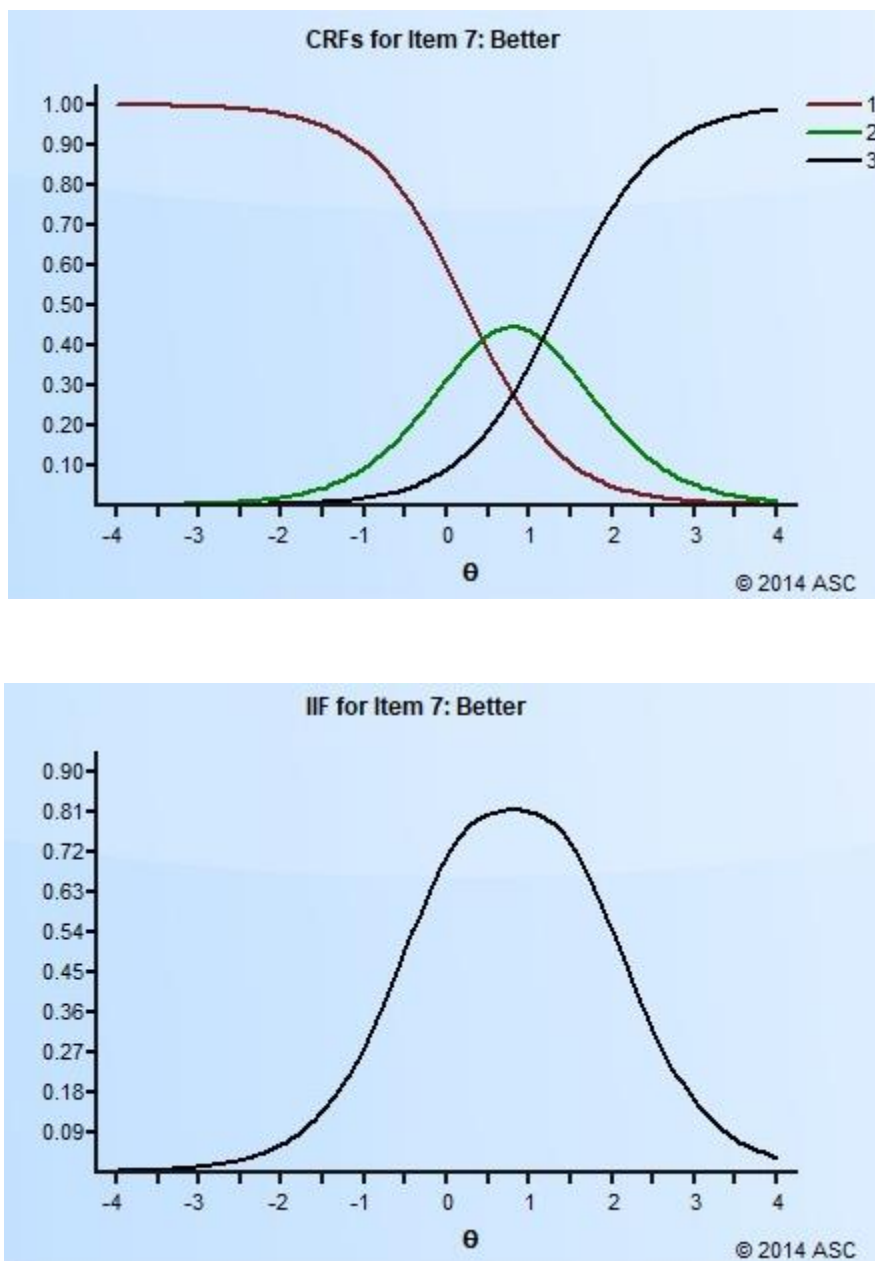


Figure A11. Category response function for high performing item 7 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -1.5 to 3 on the latent trait scale.

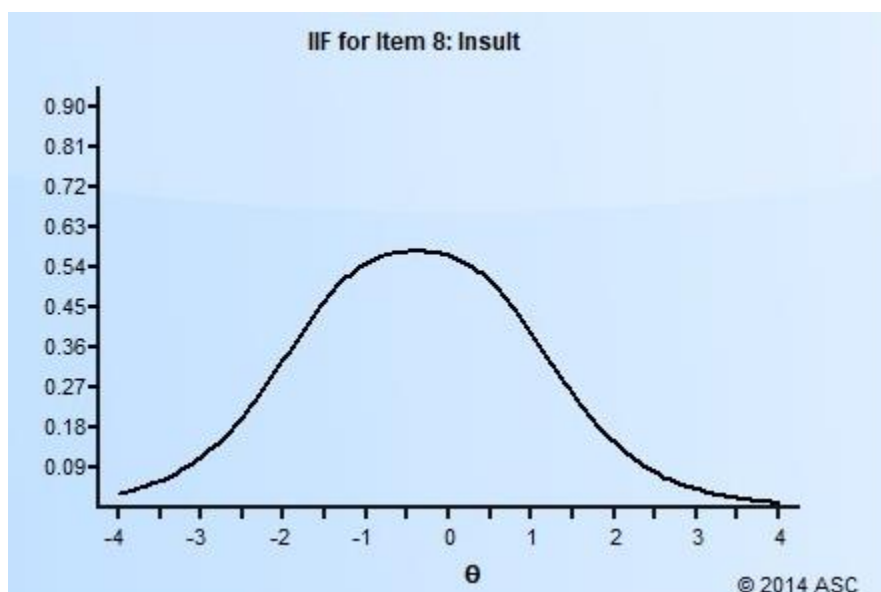
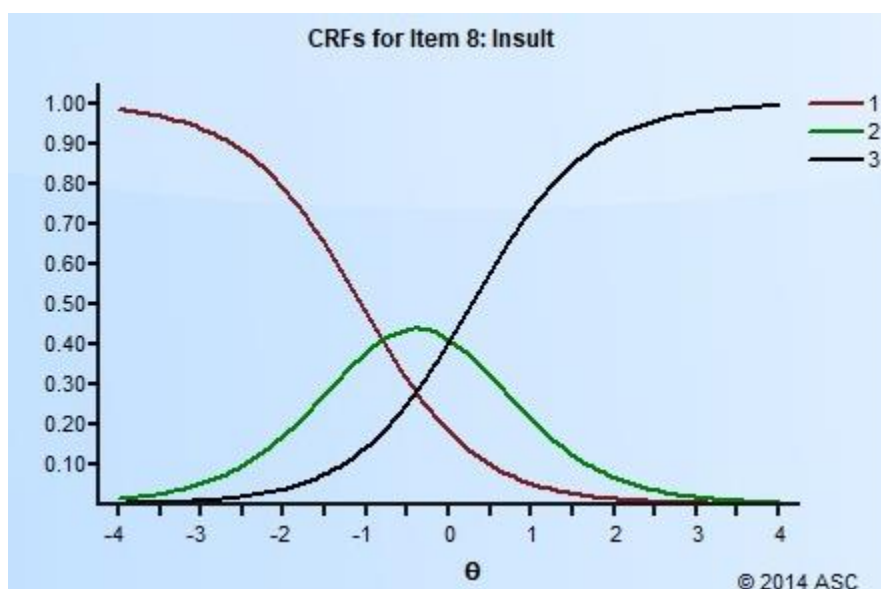


Figure A12. Category response function for moderately performing item 8 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2.5 to 2 on the latent trait scale.

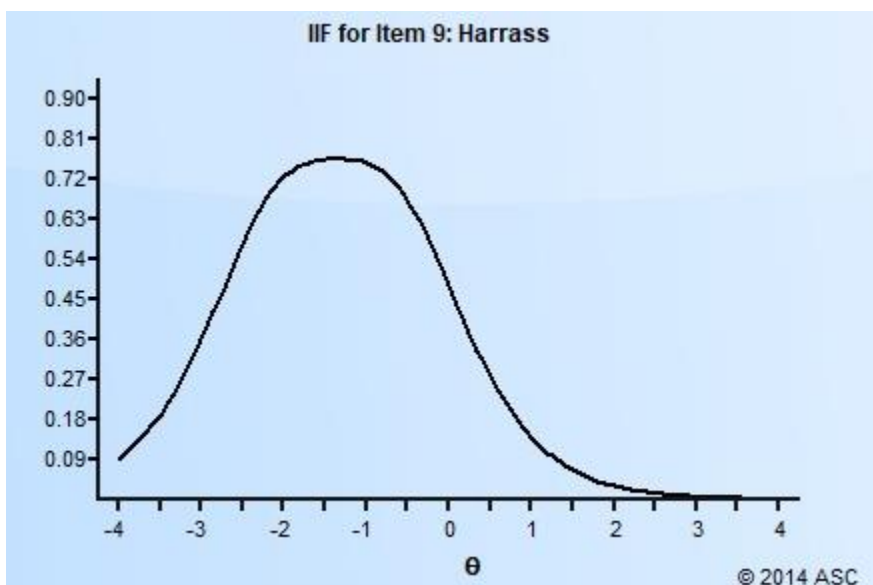
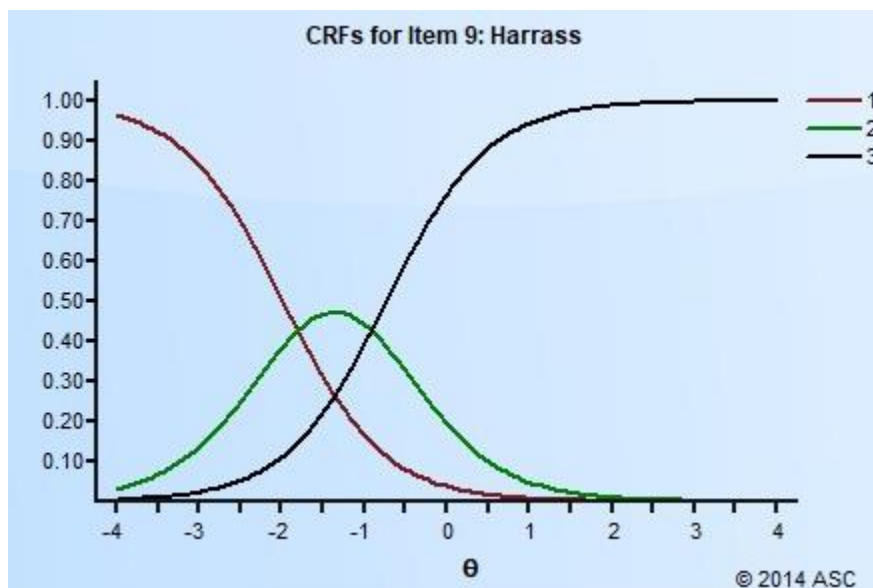


Figure A13. Category response function for high performing item 9 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -4 to 1 on the latent trait scale.

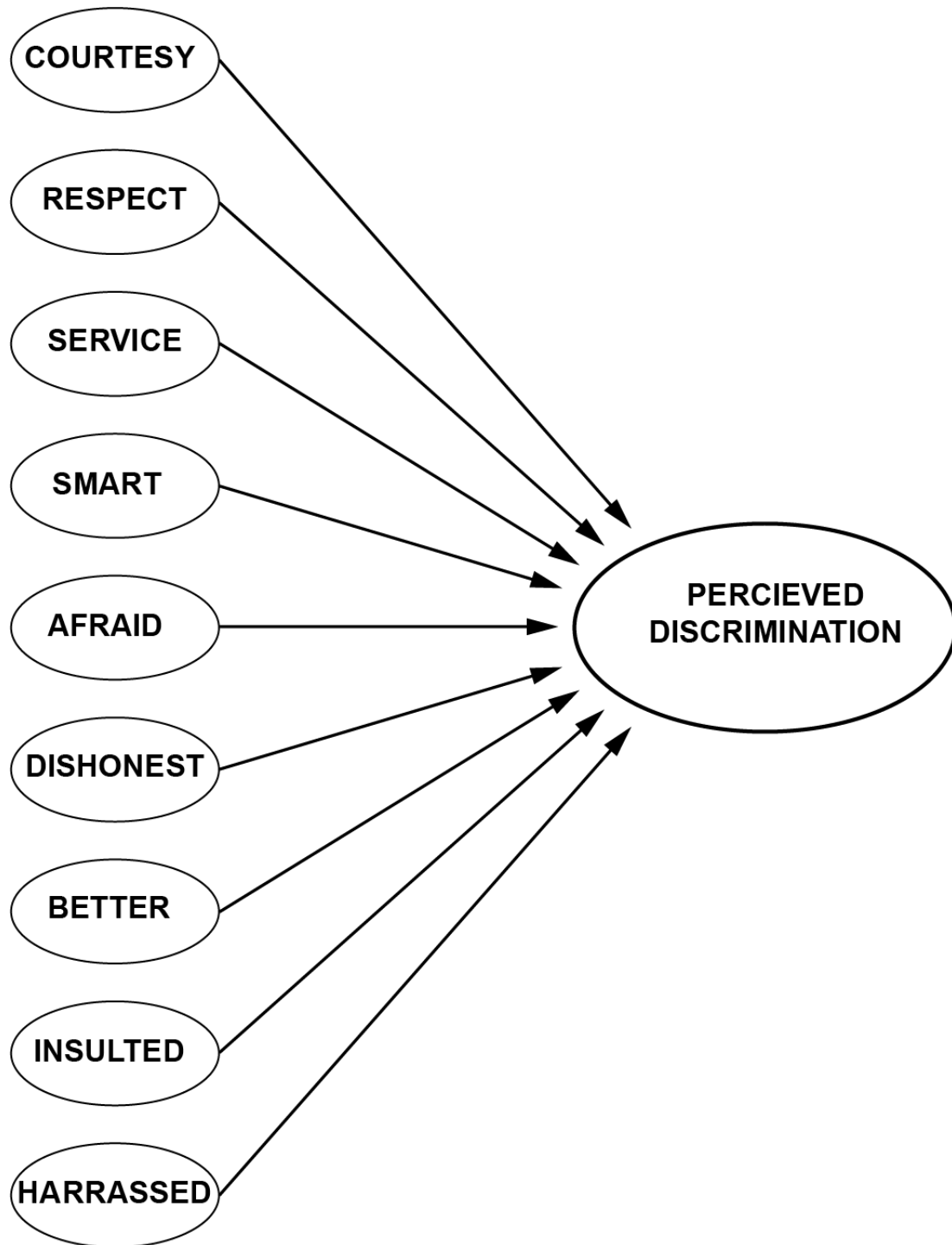


Figure A15. Perceived Discrimination Path Diagram. The large oval represents the latent construct, and the smaller ovals represent measured scale items.

APPENDIX B: SURVEY

Name: _____

ID number: _____

Gender: Male or Female

Age: _____

Number of Years in the United States: _____

ACCESS 2016 Test Score: _____

Do you plan to attend College or Technical School after graduation (circle one): Yes No

In your day-to-day life, how often do any of the following things happen to you?

	Almost everyday	At least once a week	A few times a month	A few times a year	Less than once a year	Never
You are treated with less courtesy than other people are.	1	2	3	4	5	6
You are treated with less respect than other people are.	1	2	3	4	5	6
You receive poorer service than other people at restaurants or stores.	1	2	3	4	5	6
People act as if they think you are not smart.	1	2	3	4	5	6
People act as if they are afraid of you.	1	2	3	4	5	6
People act as if they think you are dishonest.	1	2	3	4	5	6
People act as if they're better than you are.	1	2	3	4	5	6
You are called names or insulted.	1	2	3	4	5	6
You are threatened or harassed.	1	2	3	4	5	6

What do you think is the main reason for these experiences? You may check more than one box.

- Your Ancestry or National Origins
- Your Gender
- Your Race
- Your Age
- Your Religion
- Your Height
- Your Weight
- Some other Aspect of Your Physical Appearance
- Your Sexual Orientation
- Your Education or Income Level
- A physical disability
- Your shade of skin color
- Your tribe
- Other (SPECIFY) _____

Chapter IV: Perceptions of Everyday Discrimination in Immigrant and Refugee Adolescents – The Trump Effect

Introduction

Immigration is a key component of the United States population, communities and workforce. In 2013 an estimated 41.3 million immigrants lived in the United States, accounting for almost 13 % of the U.S. population (Zong & Batalova, 2015). However attitudes and political policies have shifted since the terrorist attack on September 11, 2001 (Hersh, 2013). The 9/11 hijackers had valid U.S. travel visas even though they were on the U.S. intelligence watch list. This caused increased scrutiny of the U.S. immigration system and resulted in stricter enforcement of existing immigration laws and the creation of new immigration policies (Hersh, 2013).

During the tenure of President Obama his administration aimed to reform immigration policies but was unsuccessful at changing legislation. President Obama did, however use executive actions to create more tolerant immigration policies, namely the Deferred Action for Childhood Arrivals (DACA) program. Despite the policy changes anti-immigrant sentiment continued to grow and became a major platform in the 2016 Presidential Campaign.

President Donald Trump used immigration reform as the centerpiece of his campaign. Breaking from tradition with past presidents, whom spoke of immigrants as a positive driving force within the United States, Trump framed immigration a major economic and national security threat. To combat this perceived threat he promised as president to build a wall on the United States and Mexico border to prevent illegal

immigration, make stark cuts to legal immigration, and perform extreme vetting of all new application for admission into the U.S.

In President Trump's first year in office he has signed seven immigration related executive orders, three of which are related to the "Muslim Travel Ban" that restricts access from eight majority Muslim countries to the United States (White House, 2017). The other executive orders increased the power of the U.S. Immigration Custom Enforcement (ICE) agency to remove noncitizens from within the United States as well as at the U.S.-Mexico border, financial penalties for sanctuary cities that do not cooperate with the ICE agency, and extreme changes to refugee vetting and admissions policies that will cause even longer delays for admission into the U.S.

The anti-immigrant sentiment and policy changes have caused increased anxiety and awareness within immigrant communities. Many immigrants are attempting to "go under the radar" which is leading to less reports of crime, applications for public benefits, and increases "no-shows" at healthcare appointments (Medina, 2017; Redden, 2017; Hoffman, 2017). A large increase in Canadian asylum seekers from the United States has been noticed, a decrease in unauthorized Mexican and Central American immigrants has been documented, and a decrease in international student application to U.S. universities and H1- B work visas has occurred (Paperny & Lampert, 2017; U.S. Border Patrol, 2016).

Immigrant and refugee populations are affected by these policies and have changed the way they live their lives to cope with the stress of these changes. Attitudes towards immigrants in the United States have become more negative (Pierce & Selee, 2017). The Southern Poverty Law Center has reported an increase in complaints of hate

crimes such as vandalism, threats, and intimidation since Election Day. These negative attitudes and behaviors is not insulated from school age children. In a survey given to over 10,000 educators by Teaching Tolerance, a group organized by the Southern Poverty Law Center, teachers have reported the election has had a negative impact on student behavior and mood and an increase in derogatory language used towards students of color, Muslims, immigrants. Discriminatory behavior towards minorities has been a continuing problem in the United States, which has been exasperated by the negative rhetoric and policies by the most recent administration.

Discrimination is a stressor that is associated with adverse physical and mental health outcomes in immigrant and refugee populations (Tsai & Thompson, 2015; Anglin et al., 2016; Kim, 2016; Chae et al., 2012; Ellis et al., 2010; Sinkale, 2008; Yoshihama, Bybee, & Blazeovski, 2012; LeBron et al., 2014; Oh, 2015; Leu, Walton, and Takeuchi, 2011; Nadimpalli, Dulin-Keita, & Salas, 2016; Shah, 2004; Ro & Bostean, 2015).

Discrimination can be defined as differential treatment or denial of opportunities based on group membership (Allport, 1954, 1979; Feagin & Eckberg, 1980). Two types of discrimination are explored in current research, acute discrimination, occurring sporadically throughout a lifetime, and chronic discrimination, daily occurrences that may be subtle or overt acts. The majority of the literature concerning immigrants and refugees focuses on acute discrimination, for example war related trauma, while research on experiences of chronic or everyday discrimination is underdeveloped.

The Southern region of the United States is politically conservative and understanding discriminatory experiences of immigrants and refugees in this region is of particular interest. Tennessee is a state in the South with a small but growing number of

immigrants. Foreign born individuals account for approximately 5% of the state's population. In 2015, Tennessee was home to 331,570 immigrants with 146,013 classified as women, 154,709 classified as men, and 30,848 classified as children (American Immigration Council, 2017). The immigrant population is vital to Tennessee's economy with immigrants comprising over 23% of those working in farming, fishing, and forestry and approximately 17% of life, physical, and social sciences employees (NAICS, 2015).

The Middle Tennessee area has seen a marked increase in immigrant and refugee populations over the last decade. The immigrant and refugee population has doubled in Metro Nashville and now comprise over 12% of the population. This is partly due to immigrant friendly policies put in place by former Nashville Mayor Karl Dean. The policies included turning libraries and several community centers into information centers for legal permanent residents interested in acquiring American citizenship, an initiative to involve immigrants in local government and creating partnerships with community organizations, and the creation of a Parent Ambassadors program that assists families based on language spoken in navigating the school system. Although Nashville has been progressive in its policies towards immigrants, Tennessee is still a very conservative state with undeniable ties to racism (Allison, 2017).

According to the Tennessee Immigrant and Refugee Rights Coalition, since the election of President Donald Trump Nashville immigrants have been living in fear and report mistrust of local law enforcement. As a result, immigrants are hesitant to report crimes, visit health clinics or drive their children to school (Sawyer, 2017).

Understanding how this change in political environment affects Tennessee residents is vital.

The research that has been done on everyday discrimination in immigrant and refugee populations was conducted mainly in adult populations with little research including children and adolescents. More evidence-based research is needed to understand the perception of everyday discrimination and its effect on physical and mental health as well as self-efficacy which could influence academic performance and outcomes. By the time a child reaches adolescence, most individuals that belong to a racial or ethnic minority group have experienced some type of discrimination and are aware of its influence in their daily lives (Spears, Brown, & Bigler 2005). These discriminatory experiences are correlated with emotional difficulties like increases in anger, conduct problems and depressive symptoms (Brody et al., 2006).

With the new political environment and change in attitudes in the United States, this study aims to add to the body of research by investigating the association of everyday discrimination and high school aged immigrant and refugee students. We hypothesize that these students 1) experience perceived discrimination and 2) the rhetoric and policies put in place by the Trump administration is associated with an increase in the perception of everyday discrimination.

Methods

Theoretical Framework

Discrimination can be conceptualized as a stressor. The transactional stress model by Lazarus and Folkman (1989) views stress and coping styles as developing as a result of a person's interaction with their environment. So discriminatory experiences can translate into stress depending on an individual's perception and appraisal of an

experience (Lazarus & Folkman, 1984; Wheaton, 1999). Some individuals may have resources that give them protective factors, buffering them from the experience of stress, but others who lack coping resources may experience stress. The use of transactional models of stress allows research to better explain and predict the variety of reactions that individuals show when encountering discrimination, and the effect of discrimination on self-esteem and other adjustment related variables (Major et al., 2003).

Participants

Initial data were collected as a part of a larger study examining the challenges and barriers to higher education for immigrant and refugee adolescents in Middle Tennessee. The study is ongoing and has IRB approval. Participants were recruited through a convenience sample from a high school in Middle Tennessee. The participants consist of immigrant and refugee English Language Learner (ELL) students who attended a high school in Middle Tennessee during the data collection phase and who opted to participate in the study, $n = 160$. A written consent form was given to minor participants and their caregivers. The consent form was verbally explained to the participants and any questions were answered before the survey was administered. Each participant was informed that all information and responses would be confidential, participation was voluntary and the participant could refuse to answer any questions or stop the survey at any time.

Demographics

The demographics portion of the survey was completed by a translator who was employed by the school district. Information requested included native language, gender, age, grade level, United States date of entry, and ACCESS scores. Demographic questions can be seen in Appendix B1.

Data were collected from 160 participants recruited from a Middle Tennessee High School. Participants were identified as 45% female and 55% male. All participants were between the ages of 14 to 20 years old ($M= 16.2$, $SE= 1.355$), with 30% classified as 9th graders, 31.9% as 10th graders, 22.5% as 11th graders, and 15.6 as 12 graders. Participants were divided into categories based on native language spoken, 47.5% were native Spanish speakers, 25.6% native Karen speakers, 23.8 native Arabic speakers, and the remaining 3.1% of participants were native speakers of languages not listed above (Table B1).

Instrument

The Everyday Discrimination Scale (EDS) was used to measure participant perceived discrimination. Perceived discrimination was measured using the Everyday Discrimination Scale (EDS) of the Detroit Area Study Discrimination Questionnaire, which collected information on perceptions of routine discrimination over the course of each participant's lifetime (Williams et al., 1997). This scale is a valid and reliable measure of general perceived discrimination (Krieger et al., 2005). This scale has been validated in several racial minority populations including African Americans (Taylor et

al., 2004), Hispanic-Americans (Sribney & Rodriguez, 2009; Pérez, Fortuna, & Alegría, 2008), and Asian-Americans (Gee et al., 2007).

Students were asked, “In your day-to-day life, how often have any of the following things happened to you: being treated with less courtesy than others; less respect than others; receiving poorer service than others in restaurants or stores; people acting as if you are not smart; they are better than you; they are afraid of you; they think you are dishonest; being called names or insulted; and being threatened or harassed” Next participants are asked to were asked to give the frequency of nine discriminatory events using the following responses: almost every day, at least once a week, a few times a month, a few times a year, less than once a year, or never. Participants then indicated the main reason they believed the discriminatory experiences occurred by selecting from a fixed list of attributions, including ancestry/national origin/ethnicity, gender/sex, race, age, height/weight, skin color, and other (see survey in Appendix B1).

Table B1

Characteristics of Participants for Continuous Variables, EDS (n = 160)

Characteristics	<i>M</i>	<i>SD</i>
EDS Total Score	16.58	4.52
Language Ability Score	3.08	0.95
Time in the United States of America	43.02	34.973
EDS Courtesy Item	1.99	0.81
EDS Respect Item	1.94	0.82
EDS Service Item	1.59	0.79
EDS Smart Item	2.03	0.79
EDS Afraid Item	1.65	0.80
EDS Dishonest Item	1.77	0.80
EDS Better Item	2.41	0.77
EDS Insulted Item	1.84	0.82
EDS Harassed Item	1.42	0.67

Table B1 Continued

Characteristics of Participants of Categorical Variables,
EDS (n = 160)

Characteristics	<i>n</i>	%
Native Language Spoken		
Spanish	76	47.50
Arabic	38	23.75
Karen	41	25.63
Other	5	3.12
Gender		
Women	72	45.00
Men	88	55.00
Time Point		
Time Point 1	49	35.77
Time Point 2	88	64.23
Age Band		
14 years old	17	10.63
15 years old	40	25.00
16 years old	36	22.50
17 years old	44	27.50
18 years old	14	8.75
19 years old	8	5.00
20 years old	1	0.62
Grade Level		
Freshman	48	30.00
Sophomore	51	31.88
Junior	36	22.50
Senior	25	15.62

Statistical Design

For the statistical analysis, the following variables were retained to examine how experiences of discrimination differed from before the 2016 election (time point 1) to after the 2016 election (time point 2). Variables included in this analysis are: gender, age, grade level, time in the USA, language ability, native spoken language. Information collected pertaining to gender, age, grade level and native language spoken was provided by a translator in the school district. Time living in the USA was calculated as the difference between date of arrival and date of survey completion with this information being rounded up to the closest month. Language ability was measured using ACCESS scores. ACCESS for ELL is an English language proficiency assessments for ELL students based on four language domains: Listening, Speaking, Reading, and Writing.

The primary outcome variable, perceived discrimination was measured using the Williams Everyday Discrimination Scale. This scale contains 9 items that measure various forms of the construct of perceived discrimination. Possible responses for each item were “Almost everyday” (coded 1), “At least once a week” (coded 2), “A few times a month” (coded 3), “A few times a year” (coded 4), “Less than once a year” (coded 5), and “Never” (coded 6). Scores were then summed for a minimum score of 9 (discrimination experienced daily) and maximum score of 54 (no discrimination experienced).

Internal consistency was calculated using coefficient alpha. An exploratory factor analysis was conducted to determine unidimensionality of the Everyday Discrimination

Scale. An eigenvalue of greater than 1.4 was used to determine a factor loading cut off score (Smith & Miao, 1990).

The EDS was analyzed using item response theory (IRT), by means of the Samejima's Graded Response Model (SGRM) (Samejima, 1969). Chi-square alone is not the best measure to use when using SGRM because of chi-square's sensitivity to sample size. The best measure for measuring a latent trait using SGRM is chi-square/df ratio because it reduces sensitivity to sample size (Chernyshenko, Stark, Chan, Drasgow, & Williams, 2001).

To determine how well each item discriminates across category responses, each category response function was examined. Boundary location parameters (*b-parameter*) assess the level of latent trait required to meet threshold. Quality category responses have distinct boundaries indicating the items are providing unique information. The *a-parameter* indicates the steepness of the item response function at an item's location and shows how related the item is to the latent trait of perceived discrimination. A higher *a-parameter* score illustrates the items ability to discriminate between levels of perceived discrimination.

The response categories were modified based on results from an Item Response Theory analysis that illustrated the response categories did not provide unique information using the original six response categories, so the decision was made to collapse the categories into three response categories (see example Figure C1). Collapsing low response adjacent categories of polytomous IRT models is not expected to have a negative effect on the information provided by items (Lecointe, 1995).

Responses on items that were previously scored on a 6-point scale were combined such that category 1 (coded 1 and labeled frequently), included response categories “Almost everyday, At least once a week, and A few times a month,” category 2, (coded 2 and labeled ever experienced), included response categories “A few times a year and Less than once a year,” and category 3, (coded 3 and labeled never), included response category “Never.” discrimination experienced). Scores were then summed for a minimum score of 9 (experienced frequent discrimination) and maximum score of 27 (no discrimination experienced).

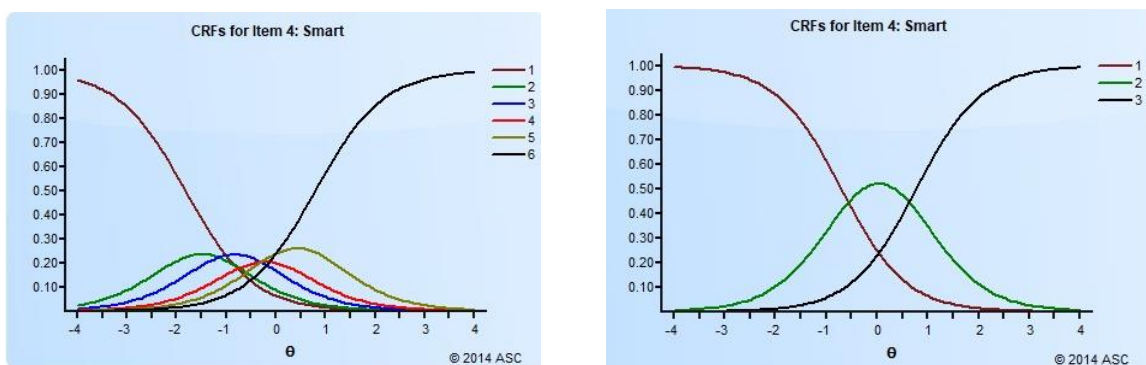


Figure C1. The left graph shows scale item 4 with six overlapping response categories overlapping indicating undefined boundary locations. The right graph shows scale item 4 with three mildly overlapping response categories indicating more defined boundary locations.

Data Entry

Data was entered and converted to SPSS for analysis. To assist in the data entry process, computerized data entry screens was created that simulate the hard-copy data forms. The screens were developed using a Windows-based data entry program such as EpiData version 3.2.

Data entry programs identified and prohibited entry of data that were inconsistent with related responses or were out of the acceptable response range. Missing values are also specified and entered despite being outside the acceptable range. To minimize error due to missing data, data entry programs take into account skip patterns within the instruments and automatically recorded missing data for items that were skipped. Data entry logs tracked instruments. These logs allowed tracking of the step in the data collection, data cleaning, or data entry process that each instrument was in at any point in time. After data entry, quality control programs were ran to check for internal consistency of related variables. Once the data were relatively clean, they are exported to SPSS for analysis. (N. L. Weatherby, Personal Communication, July, 2014).

Results

An exploratory factor analysis (EFA) and Cronbach's alpha (α) was conducted using IBM SPSS v23 to determine the structure and internal consistency of the modified Everyday Discrimination Scale on a sample of 160 participants. To explore internal consistency of the 9-item scale, Cronbach's alpha coefficient was calculated. The alpha coefficient for the sample was .82 with item correlations ranging from .43 to .60 (see Table B2).

An EFA with maximum likelihood estimation and Promax rotation reported a Kaiser-Meyer-Olkin measure of sampling adequacy of .81. The Bartlett's test of sphericity was significant, $\chi^2(36) = 285.94$, $p < .001$, indicating the assumptions for the factor analysis were satisfied. The eigenvalues and scree plot revealed that one factor explained 40.6% of the variance. A one-factor solution, was determined to be most

appropriate based on eigenvalues and scree plot. All 9 items met the factor loading cut-off of .32, and were retained.

The current study used both Classical Test Theory as well as Item Response theory analyses to examine the extent to which the Everyday Discrimination Scale measured the latent trait of perceived discrimination and the ability to discriminate between varying levels of perceived discrimination and found the scale to be both reliable and valid in our study population. Items were analyzed using Xcalibre v4.2 (Assessment Systems Corporation, 2014). The Samejima's Graded Response Model (SGRM) was determined to be the best model. The overall fit of the SGRM was [χ^2 (243.724, $N = 160$) = 2198, $p < .001$; $\chi^2/df = 1.00$]. As revealed by the Test Information Function and the distribution of theta estimates, the scale performed best at a theta range of -2.4 to 2.0 with maximum information (5.11) provided at $\theta = -0.40$ (see Figure C2 and C3). The results indicated that items performed moderately well across a range of the latent trait of Everyday Discrimination.

Table B2

Item level descriptive statistics, item-total correlations, communalities, and factor loading pattern for the Everyday Discrimination Scale: $N = 160$

Item	M	SD	Corrected Item- Total Corr.	α If Item Removed	λ^2
EDS	16.58	4.52			
1	1.99	0.81	.53	.79	.36
2	1.94	0.82	.57	.79	.38
3	1.59	0.79	.49	.80	.33
4	2.03	0.79	.57	.79	.38
5	1.65	0.80	.43	.81	.24
6	1.77	0.80	.45	.80	.25
7	2.41	0.77	.60	.79	.48
8	1.84	0.82	.50	.80	.29
9	1.42	0.67	.48	.80	.27

Note: $\lambda^2 =$ Communality

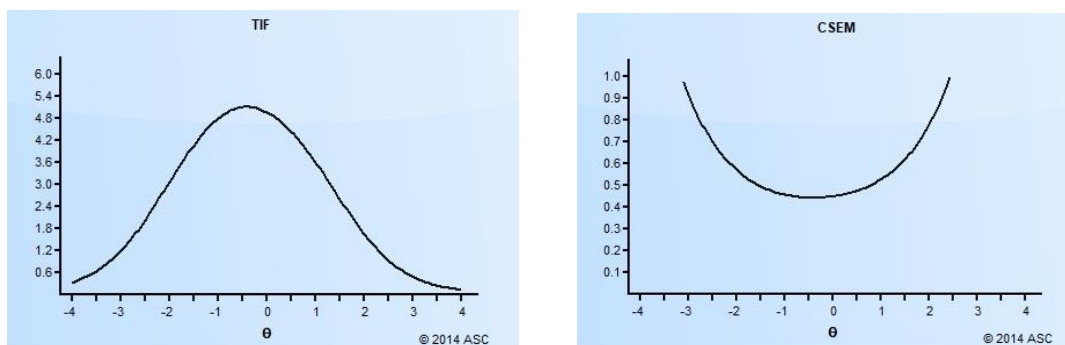


Figure C2. Test information function and the associated standard error of measurement showing the range of theta producing the most information.

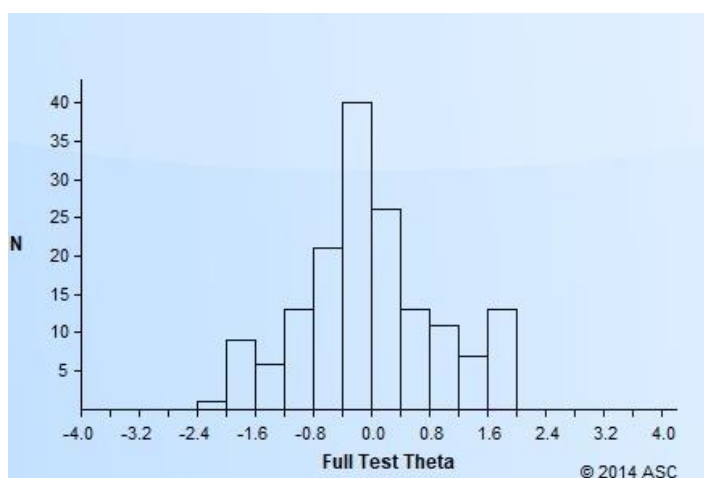


Figure C3. Sampling distribution for observed theta estimates

The overall levels of perceived discrimination appeared to be high with 93.8% of the study sample reporting at least one experience of discrimination. The items most frequently endorsed were related to *people act as if they're better than you*, with 82.5% reporting ever experiencing and 58.1% reporting frequently experiencing, *people act as if they think you are not smart* with 70% reporting ever experiencing and 32.5% reporting frequently experiencing, *you are treated with less courtesy than other people are* with 67.3% reporting ever experiencing and 32.1% reporting frequently experiencing, and *you are treated with less respect than other people are* with 63.3% reporting ever experiencing and 30.4% reporting frequently experiencing. Fewer students endorsed the following: *you are called names or insulted* with 57.2% reporting ever experiencing and 26.4%, *people act as if they think you are dishonest* reporting frequently experiencing with 54.4% reporting ever experiencing and 22.5%, *people act as if they are afraid of you* reporting frequently experiencing with 44.6% reporting ever experiencing and 20.1%, *you receive poorer service than other people at restaurants or stores* reporting frequently experiencing with 40.7% reporting ever experiencing and 18.8%, and *you are threatened or harassed* reporting frequently experiencing with 32.1% reporting ever experiencing and 10.1% reporting frequently experiencing (Table C3).

Next we examined the association between perceived discrimination and native language spoken. The native language spoken variable was categorized into 4 different categories: Spanish speaking, Arabic speaking, Karen speaking, and Other. Due to the low numbers of participants in the other category the result were not reported in this analysis. Spanish speaking students reported higher levels of perceived discrimination on 3 items: *You are treated with less courtesy than other people are* with 73.7% students

reporting ever experiencing and 43.4% of students frequently experiencing this type of discrimination, *you are treated with less respect than other people are* with 67.6% students reporting ever experiencing and 41.9% of students frequently experiencing this type of discrimination, and *people act as if they're better than you are* with 89.5% students reporting ever experiencing and 68.4% of students frequently experiencing this type of discrimination. Arabic speaking students reported higher levels of perceived

Table B3
Frequency of Discrimination, EDS (n = 160)

How often do any of the following things happen to you?	<i>Frequently (%)</i>	<i>Ever Experienced (%)</i>
You are treated with less courtesy than other people are	32.1	67.3
You are treated with less respect than other people are	30.4	63.3
You receive poorer service than other people at restaurants or stores	18.8	40.7
People act as if they think you are not smart.	32.5	70.0
People act as if they are afraid of you.	20.1	44.6
People act as if they think you are dishonest.	22.5	54.4
People act as if they're better than you are.	58.1	82.5
You are called names or insulted.	26.4	57.2
You are threatened or harassed.	10.1	32.1

discrimination on 4 items: *you receive poorer service than other people at restaurants or stores* with 50% students reporting ever experiencing and 18.4% of students frequently

experiencing this type of discrimination, *people act as if they are afraid of you* with 65.7% students reporting ever experiencing and 36.8% of students frequently experiencing this type of discrimination, *you are called names or insulted* with 64.8% students reporting ever experiencing and 32.4% of students frequently experiencing this type of discrimination, and *you are threatened or harassed* with 39.5% students reporting ever experiencing and 18.4% of students frequently experiencing this type of discrimination. Karen speaking students reported higher levels of perceived discrimination on 2 items: *people act as if they think you are not smart* with 73.3% students reporting ever experiencing and 24.4% of students frequently experiencing this type of discrimination and *people act as if they think you are dishonest* with 58.5% students reporting ever experiencing and 26.8% of students frequently experiencing this type of discrimination (Table B4).

Lastly, the association between time point and levels perceived discrimination were assessed. Two separate groups of English Language Learner students were surveyed to assess their level of perceived discrimination during the 2016 presidential campaign and approximately one year post the 2016 presidential election. A one-way ANOVA analysis was conducted and no significant difference was found between the main dependent variable, time point, and perceived discrimination $F(1,160) .136, p = .718$. No other significant main effects or interactions were found among the control variables, although a trend was detected in the native language spoken variable $F(3,160) 2.628, p = .091$ (Table B5).

Table B4

Characteristics of Participants, EDS (n = 160)

How often do any of the following things happen to you?	<i>Spanish Speaking</i> (%) Freq(Total)	<i>Arabic Speaking</i> (%) Freq(Total)	<i>Karen Speaking</i> (%) Freq(Total)
You are treated with less courtesy than other people are	43.4(73.7)	18.4(68.4)	22.5(57.5)
You are treated with less respect than other people are	41.9(67.6)	18.4(44.6)	19.5(56.1)
You receive poorer service than other people at restaurants or stores	22.4(39.5)	18.4(50.0)	12.2(34.2)
People act as if they think you are not smart.	43.4(71.0)	21.1(65.8)	24.4(73.3)
People act as if they are afraid of you.	13.3(34.6)	36.8(65.7)	19.5(44.9)
People act as if they think you are dishonest.	25.0(53.9)	13.2(50.0)	26.8(58.5)
People act as if they're better than you are.	68.4(89.5)	42.1(73.7)	56.1(80.5)
You are called names or insulted.	22.4(51.3)	32.4(64.8)	26.8(60.9)
You are threatened or harassed.	6.7(29.4)	18.4(39.5)	7.3(31.7)

Note: Freq indicates participant report frequent experiences of everyday discrimination and Total indicates total percentage of participant ever experiencing everyday discrimination

Table B5

Analysis of Variance for Everyday Discrimination Scale
Score: EDS (n = 160)

Source	Tests of Between-Subjects Effects				
	<i>MS</i>	<i>df</i>	<i>F</i>	<i>p</i>	η^2
Model	20.426	103	1.634	.150	.923
Continuous Covariates:					
Language Ability	17.865	32	1.429	.242	.766
Time in the USA	21.359	54	1.709	.135	.868
Factors:					
Time Point	1.701	1	.136	.718	.010
Native Language Spoken	32.852	3	2.628	.091	.360
Gender	.338	1	.027	.872	.002
Age	18.968	6	1.517	.243	.394
Grade Level	14.910	3	1.193	.348	.204
Error	12.500	14			

Discussion

Overall levels of perceived discrimination appear to be high among students with over 90% reporting at least one experience of discrimination. Also reports of frequent discrimination appear to be high with many students reporting frequent discrimination on at least one item with the Everyday Discrimination Scale. This suggests that study participants were aware of and have experienced some form of discrimination. Other studies that have examined perceived discrimination utilizing Williams Everyday Discrimination scale have reported high to moderate levels of discrimination; however, most studies have lower reports of frequent discrimination.

This may suggest that this particular time frame is crucial to the increased perceptions of discrimination. Both policies and rhetoric put forth by the current political environment and administration have been specifically targeted at immigrants and refugees, especially Mexican and majority Muslim countries.

Various items on the Everyday Discrimination Scale were shown to affect different native language groups than others. Spanish speaking participants identified *being treated with less courtesy, being treated with less respect, and other people acting like they are better than you are* more frequently than other language groups. Arabic speaking participants identified receiving poorer service than others, other being afraid of you, being insulted or called names, and being harassed or threatened more frequently than other language groups. Karen speaking participants identified people thinking they are not as smart and people thinking they are dishonest more frequently than other language groups. Native Arabic speaking students indicating perceptions of being harassed and that others are afraid of them is particularly interesting due to the

association of individuals from this group with Muslim extremists. Native Arabic speaking participants indicated they have been targeted with unwarranted prejudice and bigotry. These findings are interesting but should be interpreted with caution. A larger more diverse study sample should be utilized in the future in order to generalize these findings to the general population.

Our hypothesis of immigrant and refugee student perceiving higher levels of everyday discrimination after the 2016 presidential election was not supported by the data examined for this study. Factors that may have affected this result could be due to a ceiling effect, a measurement limitation that occurs when the highest possible score or close to the highest score on a measurement instrument is reached. This can decrease the chances of the measurement instrument correctly measuring the intended construct (Salkind, 2010).

Time point 1, pre-election, was during the 2016 presidential campaign. Campaign promises and rhetoric was specifically targeted at immigrants and refugees. Some of the campaign promises and rhetoric included building a border wall to keep Mexican citizens out of the USA, halting refugees from certain countries from entering the USA, and calling Mexicans rapist and drug dealers (Pew Research Center, 2016). This may have caused increased levels of perceived discrimination. Future studies should include a qualitative approach that could allow for more insight into the levels of discrimination perceived both pre and post the 2016 presidential election.

No significant difference in levels of perceived discrimination may also have resulted because of resiliency factors. Unmeasured coping mechanisms and resiliency factors may be influential in perceptions of everyday discrimination among participants

(Pascoe and Richman, 2009). Resilience could be predicated by personal attributes such as inner strength, competence, or optimism. It is possible that the participants have learned positive coping skills when overcoming past adversity and now thrive in the face of adversity (Connor & Davidson, 2003; Wagnild & Collins, 2009).

The surveyed school has policies and curriculum in place that align with resiliency factors found within the existing literature that can buffer the effect of discriminatory stress such as social support. The school has a large number of ELL students and this may create a community that supports the student's sense of self and support. This may create a sense of confidence that their internal and external environments are predictable and therefore manageable. This would support Antonovsky's (1987) sense of coherence where three key principles: comprehensibility, manageability, and meaningfulness increases the likelihood of believing that things will work out well.

Lastly a ceiling effect may be the reason for no significant difference in the levels of perceived discrimination within the surveyed population. No significant difference was found between levels of perceived discrimination when comparing perceived discrimination before and after the 2016 election. In the study population, 93.8% of participant reported ever experiencing discrimination. This is a seemingly higher rate than reports of perceived discrimination in prior studies. A study of adult Latinos living in New York City show the prevalence of reporting any type of discrimination among Latinos and African American was 38% and 53%, respectively (Stuber, Galea, Ahern, Blaney, & Fuller, 2003). Another study reported the prevalence of perceived discrimination using a nationwide sample of adult Latinos showed of 29.9%, with

younger adults between the ages of 18 – 24 reporting a higher rate of perceived discrimination, 49.9% (Perez, Fortuna & Alegria, 2008). Due to the study population in the current study reporting higher rates of perceived discrimination, a significant increase may not be detected using the current scale.

Limitations

Because the participation in the EDS survey was optional, the sample may not be representative of the population. The history of the participants is unknown to the investigator. Some unknown events may have caused a change in perception not related to the research question. The *n* of study participants is small and only includes participants from one high school therefore the results may not be generalizable to all ELL students in Middle Tennessee. Also other variables, such as history and familial experiences of discrimination may act as confounders and may influence the outcome of this study. The data collected are self-reported data and responses maybe unreliable.

Future studies should survey a larger more geographically diverse sample. The current study has identified high levels of perceived discrimination among ELL high school students and a study using a qualitative approach could provide detailed information concerning possible changes in perceived discrimination due to the rhetoric and policies put forth by the Trump administration.

Conclusion

The current study indicates that immigrant and refugee students in Middle TN were aware and perceived varying levels of perceived discrimination. Over 90% of study participants indicated that they have experienced at least one form of discrimination

measured in the Everyday Discrimination Scale. This is higher than previous studies conducted in adult immigrant and refugee populations residing in the United States and may indicate that perceptions of discrimination have increased due to the change in political climate. Understanding perceived discrimination in immigrant and refugee populations is paramount due to its association with negative health outcomes. Health care outcomes could be improved by reducing the level of discrimination perceived by immigrant and refugee adolescents and understanding these varying experiences can help researchers tailor more effective programs based on shared experiences of like groups.

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APPENDIX A: SURVEY

Name: _____

ID number: _____

Gender: Male or Female

Age: _____

Number of Years in the United States: _____

ACCESS 2016 Test Score: _____

Do you plan to attend College or Technical School after graduation (circle one): Yes No

In your day-to-day life, how often do any of the following things happen to you?

	Almost everyday	At least once a week	A few times a month	A few times a year	Less than once a year	Never
You are treated with less courtesy than other people are.	1	2	3	4	5	6
You are treated with less respect than other people are.	1	2	3	4	5	6
You receive poorer service than other people at restaurants or stores.	1	2	3	4	5	6
People act as if they think you are not smart.	1	2	3	4	5	6
People act as if they are afraid of you.	1	2	3	4	5	6
People act as if they think you are dishonest.	1	2	3	4	5	6
People act as if they're better than you are.	1	2	3	4	5	6
You are called names or insulted.	1	2	3	4	5	6
You are threatened or harassed.	1	2	3	4	5	6

What do you think is the main reason for these experiences? You may check more than one box.

- Your Ancestry or National Origins
- Your Gender
- Your Race
- Your Age
- Your Religion
- Your Height
- Your Weight
- Some other Aspect of Your Physical Appearance
- Your Sexual Orientation
- Your Education or Income Level
- A physical disability
- Your shade of skin color
- Your tribe
- Other (SPECIFY) _____

CHAPTER V: CONCLUSIONS

Perceived discrimination is an understudied stressor that affects various population groups. This stressor is linked with both physiological and psychological negative health outcomes. Research that examined perceived discrimination often used African Americans as the study population, leaving a gap in information when concerning other minority groups. There is a lack of research pertaining to immigrant and refugee populations and general measures of perceived discrimination.

Perceived discrimination is a phenomenon experienced by over 90% of the surveyed population. This population is comprised of immigrant and refugee high school students in Middle Tennessee. While the present study did not find a significant increase in levels of perceived discrimination among the surveyed population pre and post the 2016 presidential election, high percentages of participants reported at least one experience of discrimination in the past year. This is a concern because everyday discrimination is associated with negative effects on overall mental and physical wellness due to a heightened levels of physiological response demands to cope with discrimination stress (Ong, et al, 2009).

Also experiencing this type of stressor during adolescence is a concern. As previously mentioned, adolescence is a crucial developmental time period in bio-behavioral and physical development. Adolescence is a time when general trajectories, that can influence educational and occupational decisions as well as health behaviors, are set that can have a major impact on adult life (Dahl, 2004). So it is imperative for future research to investigate the impact of the stress of discrimination among immigrant and

refugee youth, especially within the current political climate. Understanding the role of coping and resilience factors is also of equal importance. A major criticism of the existing literature is the focus on the potential pathology of the stress of discrimination instead of the resilience displayed by minority populations (Hutchinson and Dorsett, 2012). Future research could benefit from examining the coping and resiliency factors displayed by individuals or provided within an individual's social context. Studies in racial minority groups have indicated that resilience is not only predicated on personal qualities but is multidimensional and can be thought of as a more communal construct that includes a broader social context, therefore resilience can be moderated by things such as personal qualities, support, and religion (Hutchinson and Dorsett, 2012).

The current study included refugee and immigrant students from various racial and ethnic backgrounds. Students were grouped according to their native language spoken. Experiences of specific types of discrimination were reported more frequently by certain groups. Arabic speaking students reported that others are afraid of them more frequently than other groups. This is significant because of the association of individuals from Arabic speaking countries with Muslim extremists. This reductionist point of view has led to unwarranted prejudice and bigotry towards people from Muslim majority countries.

In this study, Spanish speaking students reported being treated with less courtesy and respect than others more frequently than other groups. President Trump personally has referred to Mexican citizens as rapist and drug dealers and this sentiment is also held by many American citizens (Pew Research Center, 2016). As a result, an increase in

anxiety and fear among Spanish speaking immigrants has been noted (Pierce & Selee, 2017).

Williams Everyday Discrimination Scale was used to measure perceived discrimination in immigrant and refugee students and was shown to be both a reliable and valid measure of perceived discrimination in the current population. The current study used both Classical Test Theory as well as Item Response Theory analyses to examine the extent to which the Everyday Discrimination Scale measured the latent trait of perceived discrimination and the ability to discriminate between varying levels of perceived discrimination. Internal consistency, measured by Cronbach's alpha, was above the cut-off point of .60. An exploratory factor analysis revealed the 9-item survey was grouped into one-factor which suggests items are related to the construct of perceived discrimination (William et al., 1997).

The Item Response Theory analysis revealed undefined boundary locations illustrating that response categories were not providing unique information on varying levels of perceived discrimination. In order to resolve this issue the six response categories were collapsed into three response categories and resulted in more defined boundary locations. Previous researchers have collapsed response categories by dichotomizing the response options into *ever* or *never* experiencing perceived discrimination. The current study may be the first to justify collapsing categories of the Everyday Discrimination scale using results of an Item Response Theory analysis. Collapsing into three response categories instead of dichotomizing the response categories provides a wider range of information on the level of perceived discrimination experienced by respondents.

All nine items had sufficient loading, and no candidates for removal were found. This is significant because only a few studies exist that assess the validity of this tool in immigrants and refugees and the current study may be the only study to assess psychometric properties of the Everyday Discrimination Scale among immigrant and refugee students. One benefit of IRT analyses is its generalizability into similar populations. This analysis indicates that the Everyday Discrimination Scale is an appropriate scale to use within this and possibly similar populations to measure perceived discrimination. However this result should be taken with caution due the current study's relatively small number of participants.

Research pertaining to a general measure of perceived discrimination in refugee and immigrant populations is lacking and future research should be focused in this area. The current administration has veered from the path of past administrations, both Democratic and Republican, that cast immigrants as vital to the success of the United States. The current administration portrays immigrants and refugees as both safety and economic threats to the United States. Existing research illustrated that perceived discrimination and negative physical and mental health are positively associated (Pascoe and Richman 2009). Most studies concerning everyday discrimination have focused on adult African American populations with few studies investigating other minority groups, particularly immigrant and refugee populations. The literature that exists on immigrant and refugee populations also supports the association between perceived discrimination and negative physical and mental health outcomes. This information can be used to create interventions that can be used by secondary school administrators, faculty, and staff to build resilience and coping skills in immigrant and refugee students. Research could also

inform public health practice through education of practitioners in the negative health implications associated with everyday discrimination.

Although variations between different racial and ethnic groups, ages, gender and English language proficiency were not found in the current study, more research examining everyday discrimination using larger and more diverse immigrant and refugee populations is necessary to corroborate these findings. Understanding the differences among immigrant and refugee populations will assist in creating targeted interventions to combat negative health outcomes, and expanding this area of literature will better inform researchers on how to develop interventions to build coping skills and resiliency in immigrant and refugee populations.

Understanding the prevalence of perceived discrimination and the importance of resiliency in adolescent immigrants and refugees can assist in addressing disparities in the healthcare system. Health care outcomes could be improved by reducing the level of discrimination perceived by immigrant and refugee adolescents. To accomplish this, an understanding of beneficial resiliency factors and coping skills would need to be further researched. Employing proper coping skills could result in better physiological and psychological health outcomes. Health researchers must also take in account differences in perceptions of discrimination between ethnic groups. This study illustrated that various groups differed in their types of experiences of discrimination and understanding these varying experiences can help researchers tailor more effective programs based on shared experiences of like groups.

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APPENDIX A: TABLES AND FIGURES

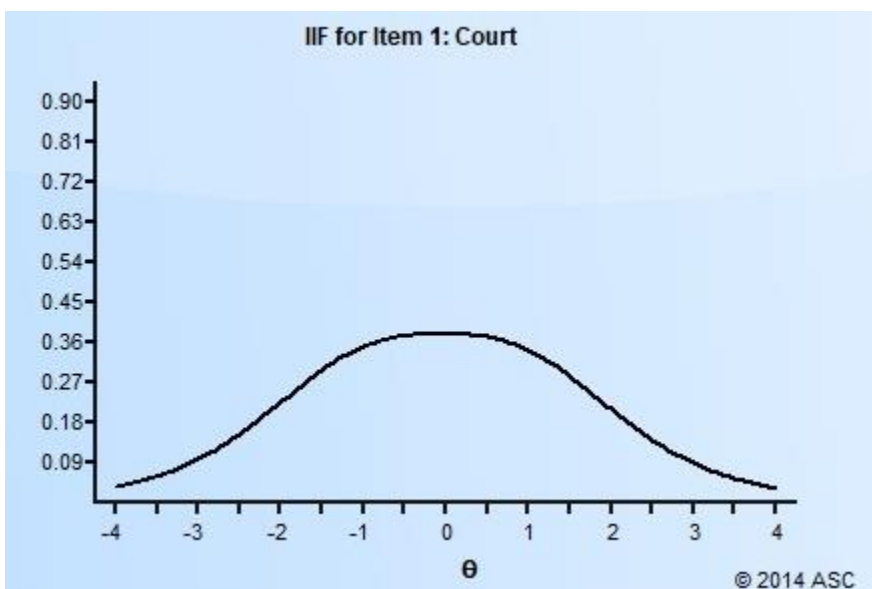
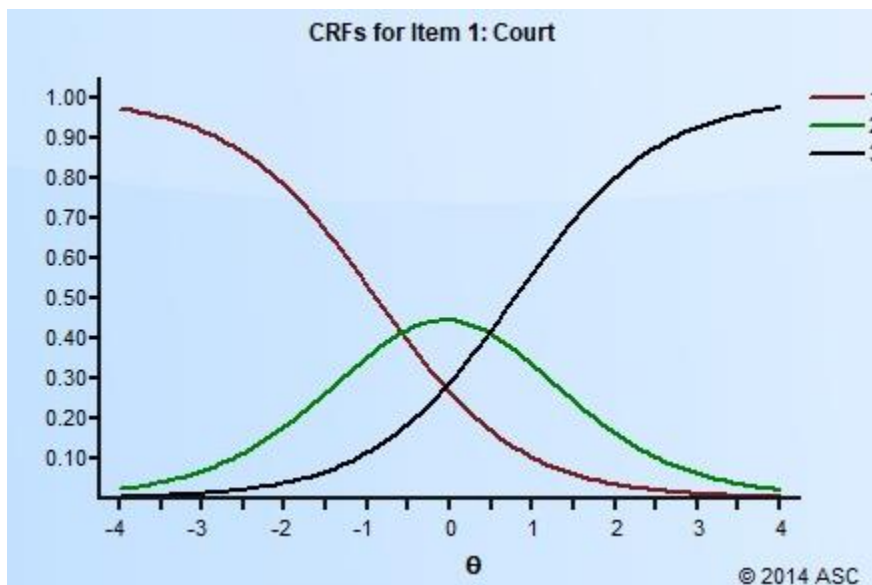


Figure A6. Category response function for moderately performing item 1 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2.5 to 2.5 on the latent trait scale

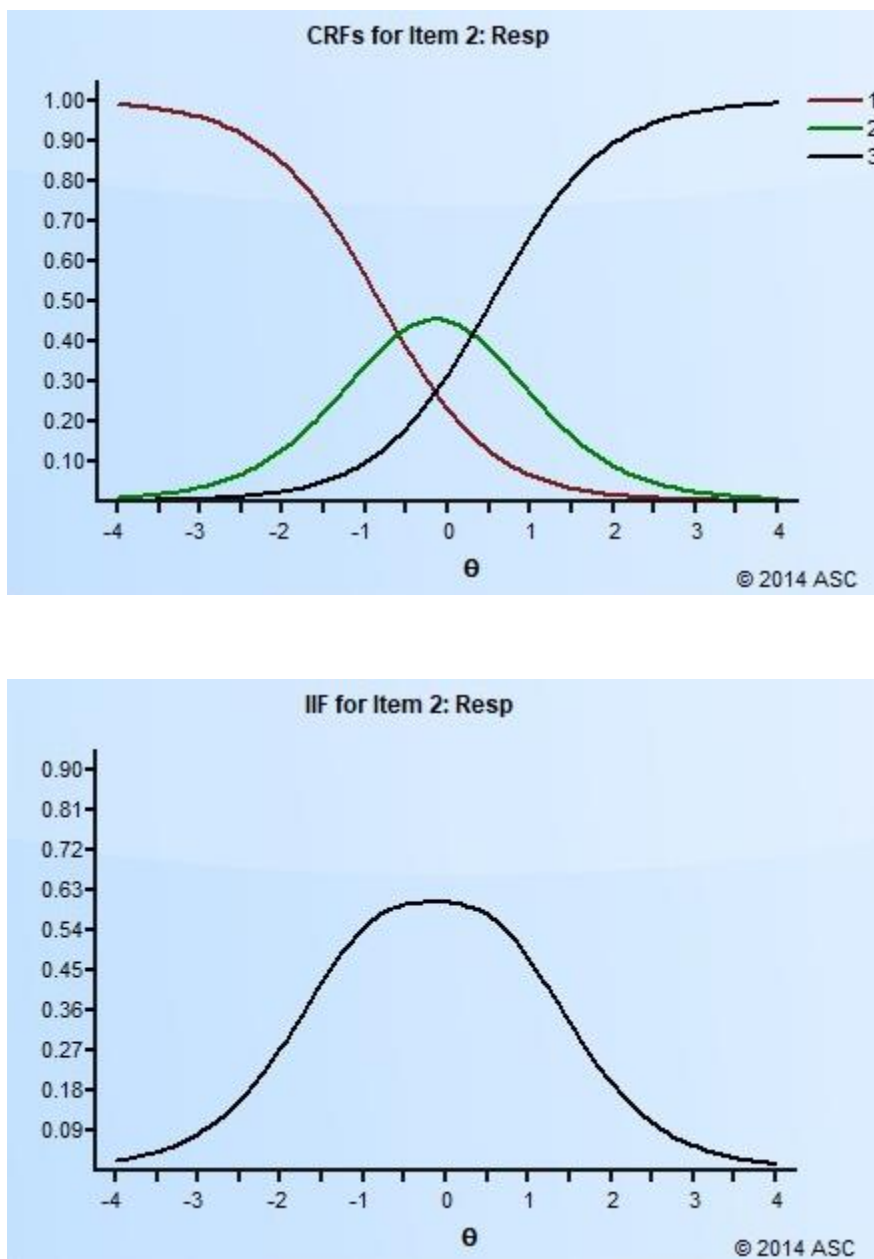


Figure A7. Category response function for high performing item 2 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2.5 to 2 on the latent trait scale

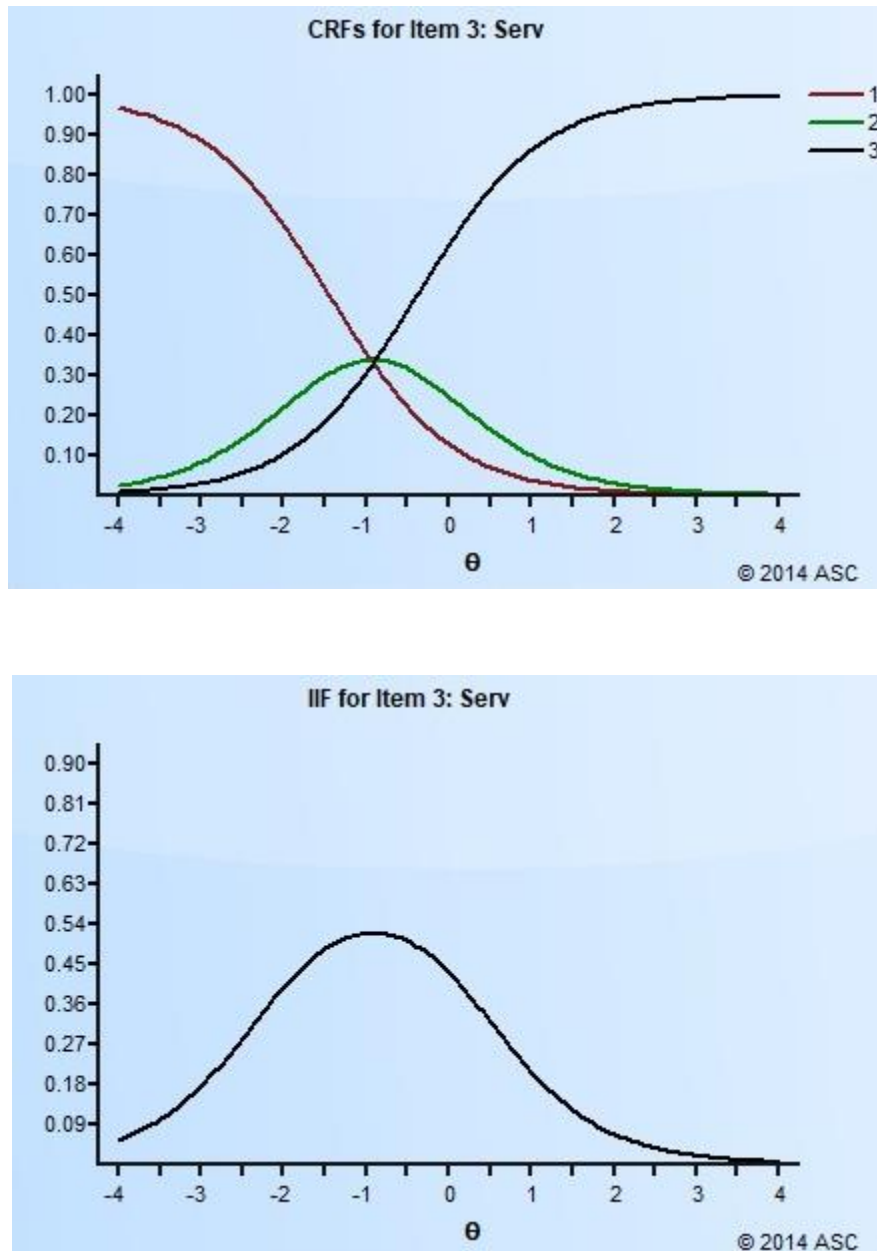


Figure A7. Category response function for moderately performing item 3 of the Everyday Discrimination Scale, with overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -3 to 1.5 on the latent trait scale.

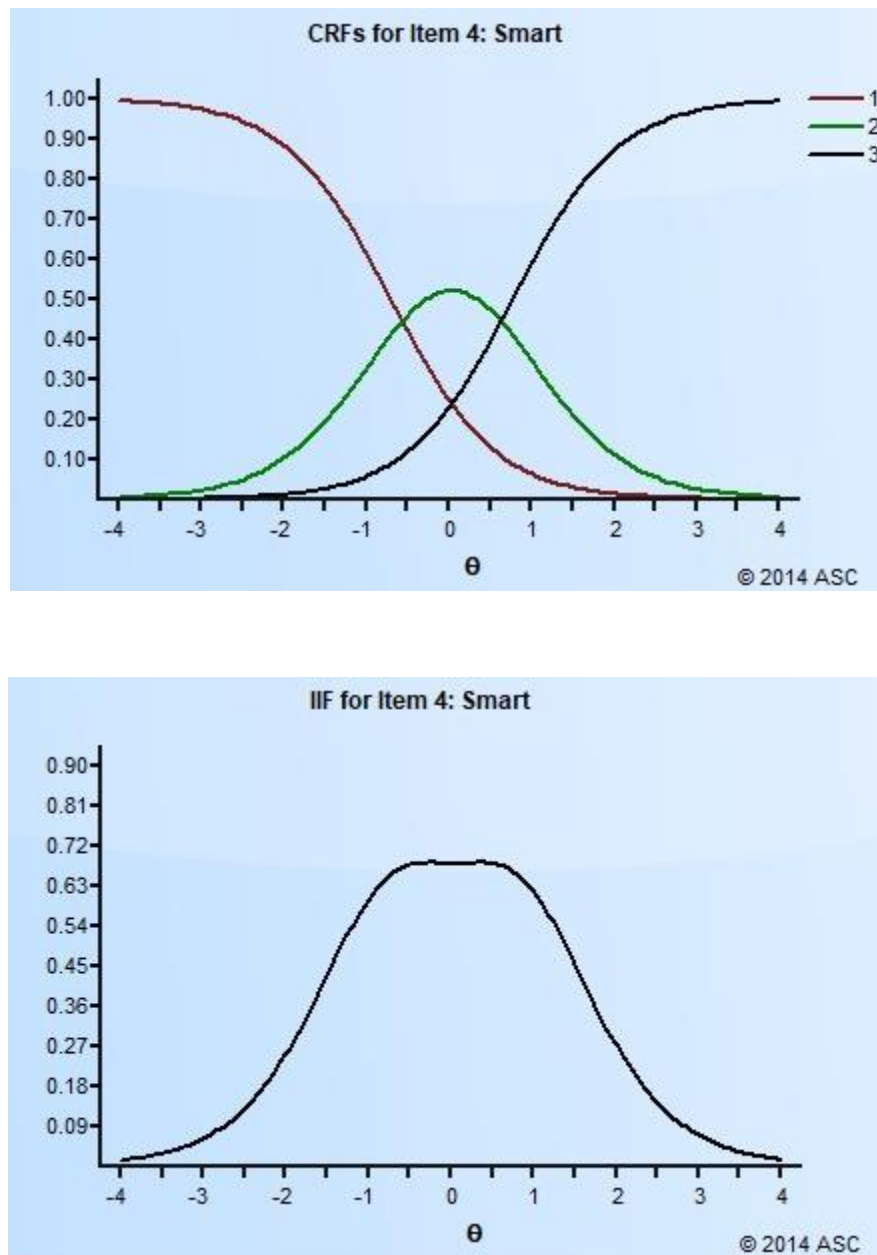


Figure A8. Category response function for high performing item 4 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2 to 2.5 on the latent trait scale.

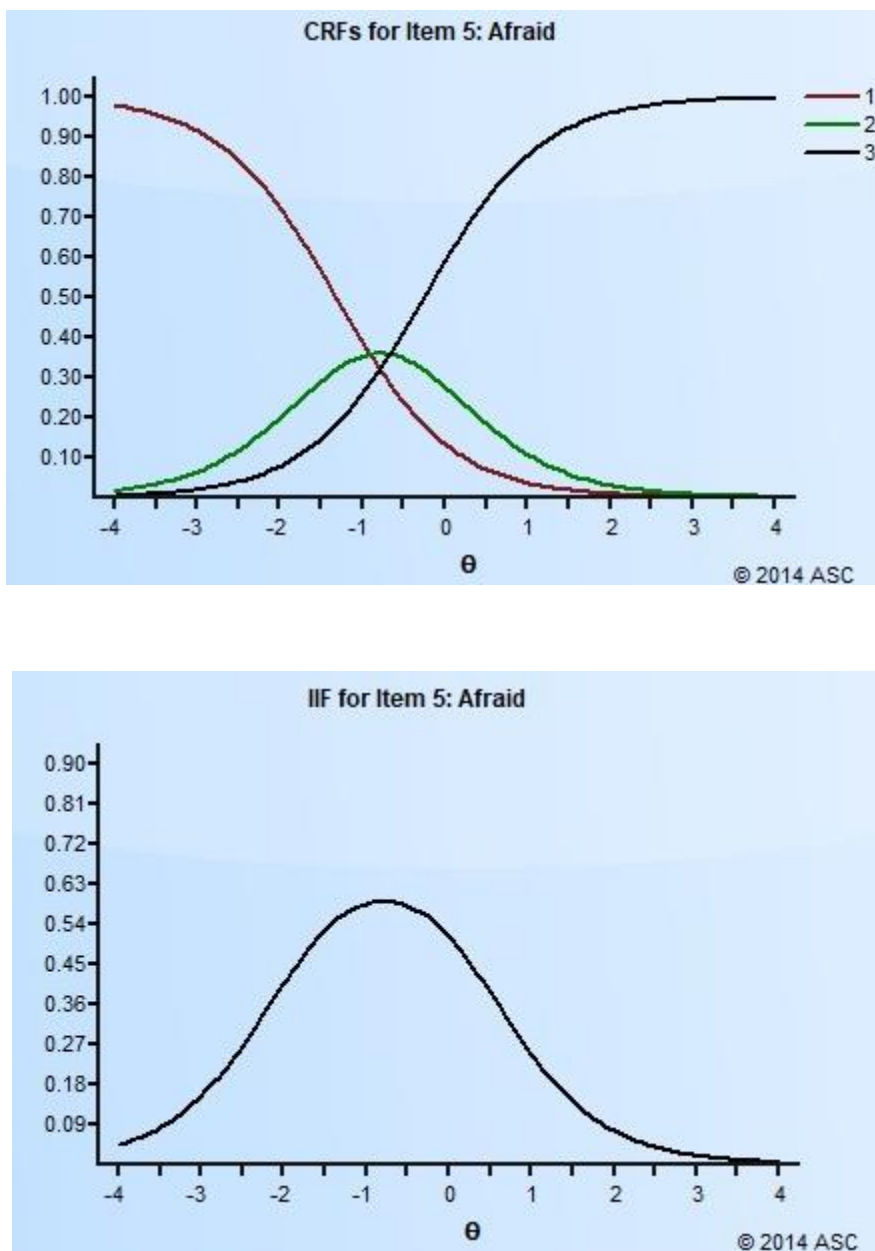


Figure A9. Category response function for moderately performing item 5 of the Everyday Discrimination Scale, with overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -3.0 to 1.5 on the latent trait scale.

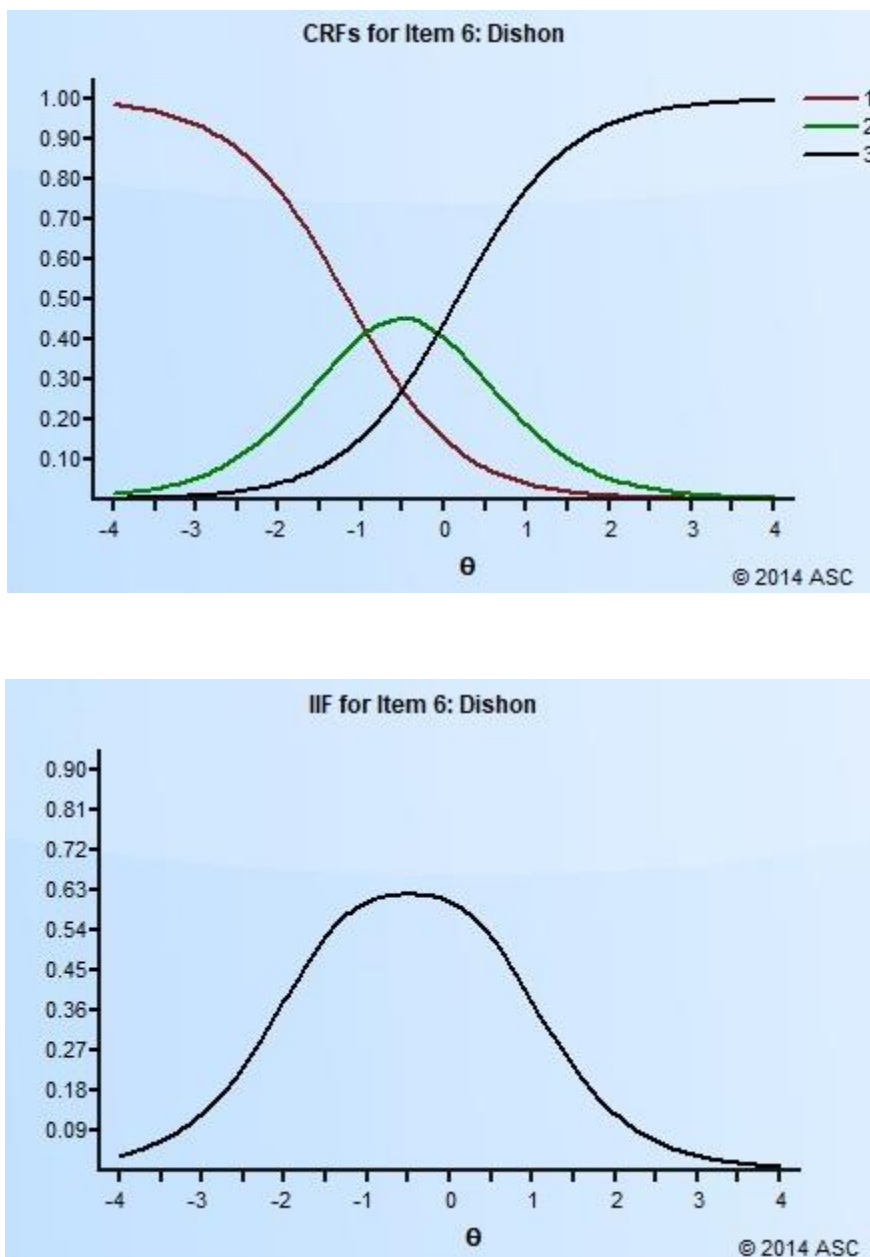


Figure A10. Category response function for moderately performing item 6 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -3 to 2 on the latent trait scale.

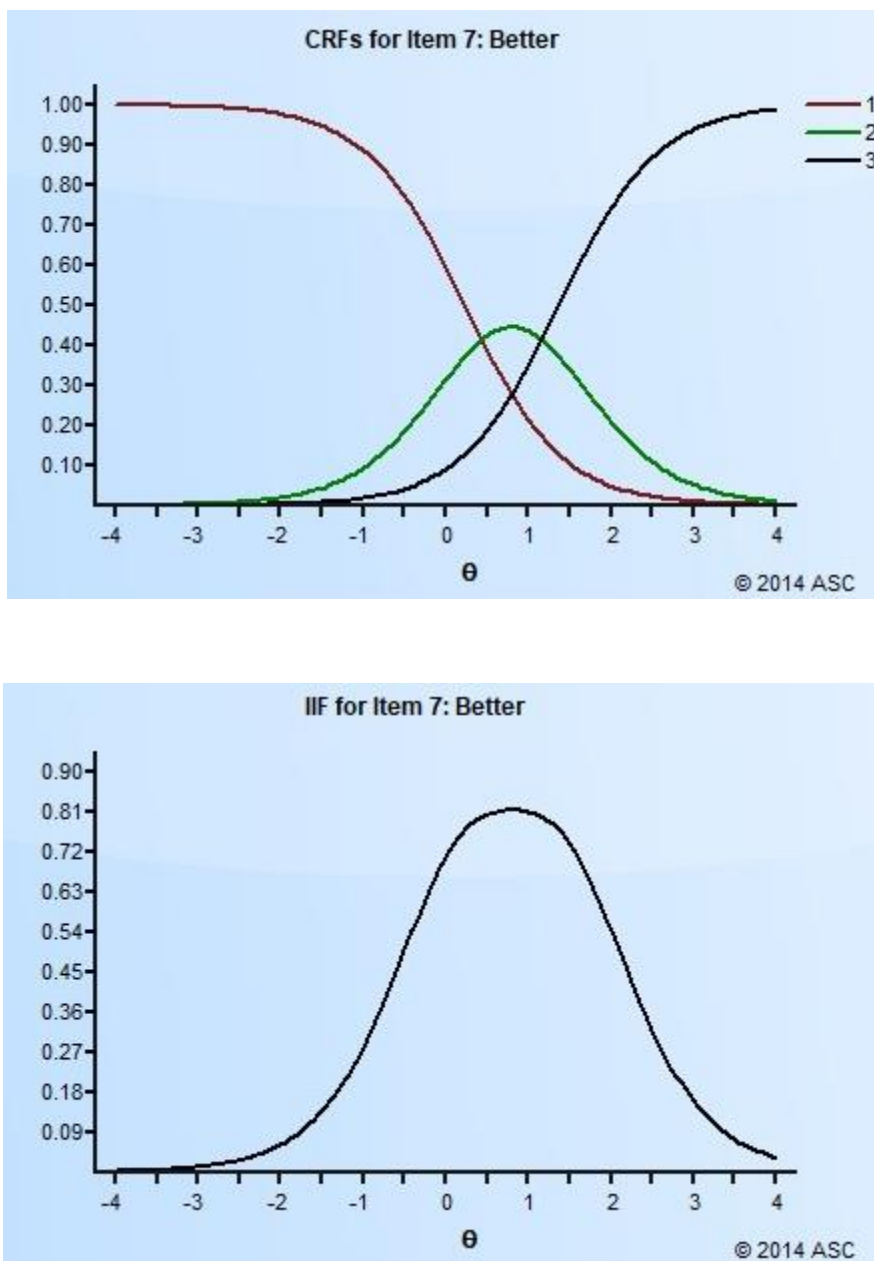


Figure A11. Category response function for high performing item 7 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -1.5 to 3 on the latent trait scale.

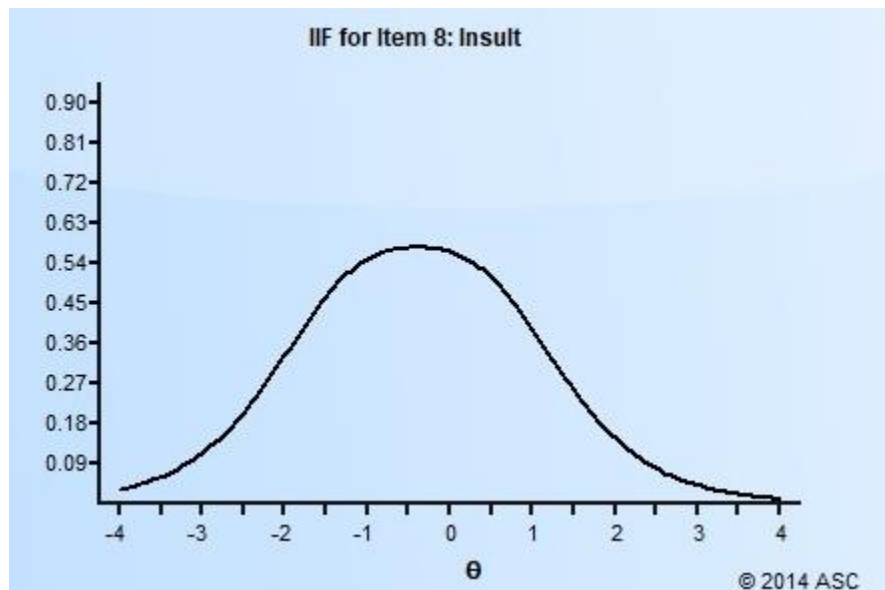
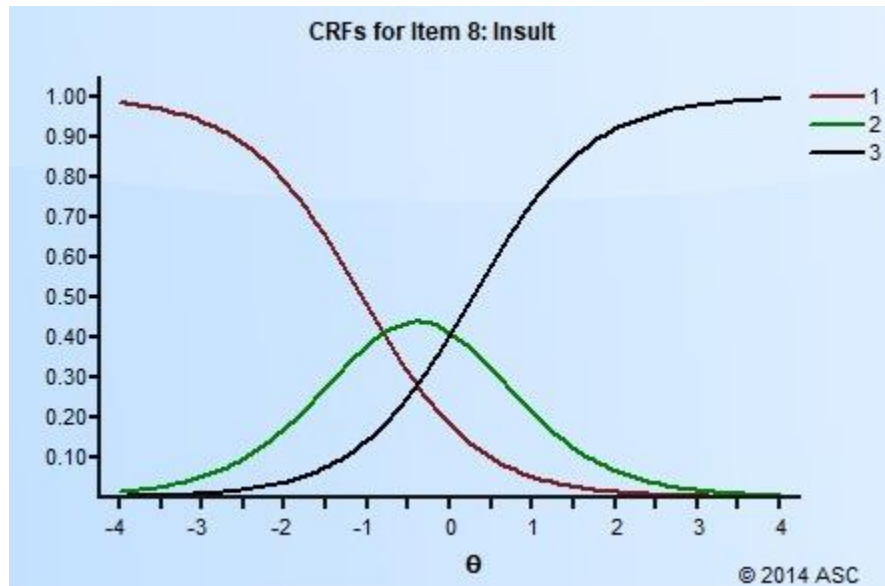


Figure A12. Category response function for moderately performing item 8 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -2.5 to 2 on the latent trait scale.

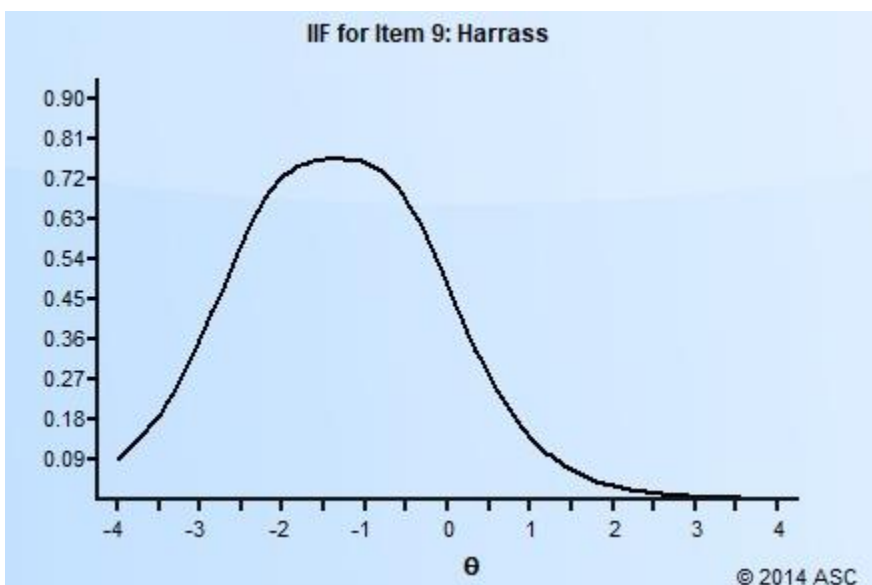
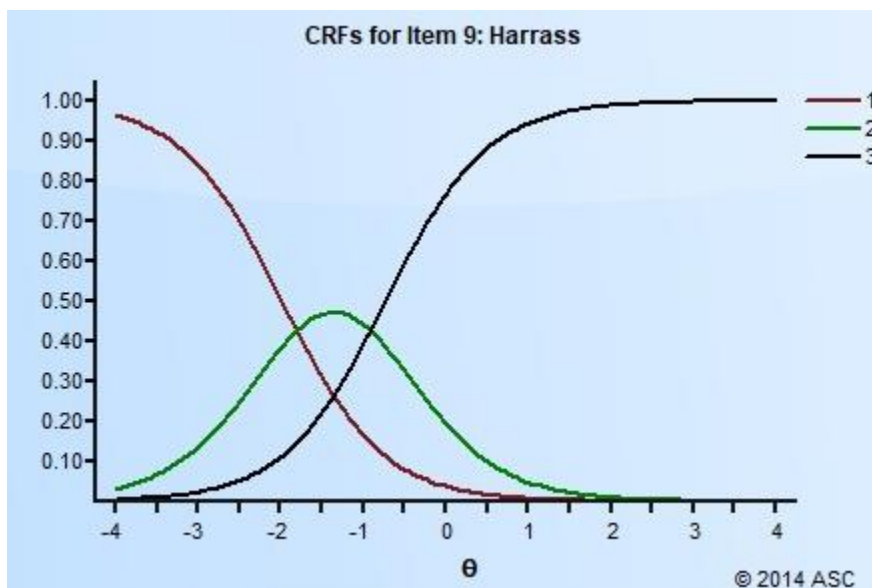


Figure A13. Category response function for high performing item 9 of the Everyday Discrimination Scale, with mildly overlapping categories that indicate defined boundary locations, and the associated item information curve indicating information is provided at of -4 to 1 on the latent trait scale.

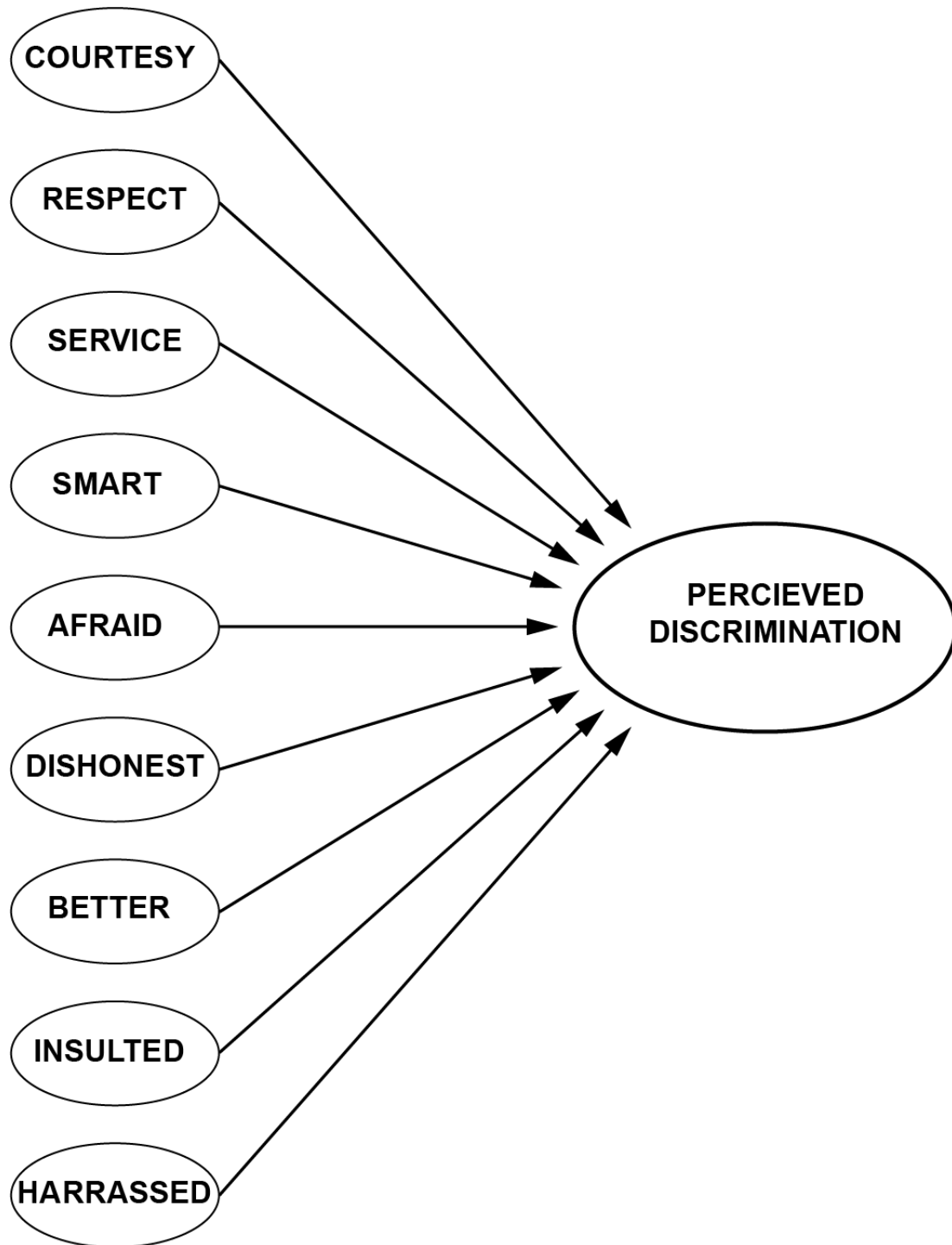


Figure A15. Perceived Discrimination Path Diagram. The large oval represents the latent construct, and the smaller ovals represent measured scale items.

APPENDIX B: SURVEY

Name: _____

ID number: _____

Gender: Male or Female

Age: _____

Number of Years in the United States: _____

ACCESS 2016 Test Score: _____

Do you plan to attend College or Technical School after graduation (circle one): Yes No

In your day-to-day life, how often do any of the following things happen to you?

	Almost everyday	At least once a week	A few times a month	A few times a year	Less than once a year	Never
You are treated with less courtesy than other people are.	1	2	3	4	5	6
You are treated with less respect than other people are.	1	2	3	4	5	6
You receive poorer service than other people at restaurants or stores.	1	2	3	4	5	6
People act as if they think you are not smart.	1	2	3	4	5	6
People act as if they are afraid of you.	1	2	3	4	5	6
People act as if they think you are dishonest.	1	2	3	4	5	6
People act as if they're better than you are.	1	2	3	4	5	6
You are called names or insulted.	1	2	3	4	5	6
You are threatened or harassed.	1	2	3	4	5	6

What do you think is the main reason for these experiences? You may check more than one box.

- Your Ancestry or National Origins
- Your Gender
- Your Race
- Your Age
- Your Religion
- Your Height
- Your Weight
- Some other Aspect of Your Physical Appearance
- Your Sexual Orientation
- Your Education or Income Level
- A physical disability
- Your shade of skin color
- Your tribe
- Other (SPECIFY) _____

APPENDIX C: RESEARCH MATERIALS

IRB
INSTITUTIONAL REVIEW BOARD
 Office of Research Compliance,
 010A Sam Ingram Building,
 2269 Middle Tennessee Blvd
 Murfreesboro, TN 37129



EXPEDITED PROTOCOL APPROVAL NOTICE

7/31/2015

Investigator(s): Denise Bates (PI), Ida Faxzillah, Claire Cook, Laura Clark, Collin Olson, Marquinta Harvey and Tara Prairie
 Investigator(s) Email: denise.bates@mtsu.edu; ida.fadzillah@mtsu.edu; Claire.cook@mtsu.edu; laura.clark@mtsu.edu; collinolson@gmail.com;
 Department: Health and Human Performance
 Protocol Title: "Access to higher education needs of Middle Tennessee refugee and immigrant youth "
 Protocol ID: 15-324

Dear Investigator(s),

The MTSU Institutional Review Board (IRB), or its' representative, has reviewed the research proposal identified above. The MTSU IRB or its representative has determined that the study poses minimal risk to participants and qualifies (7) *Research on individual or group characteristics or behavior* for an **EXPEDITED** review under 45 CFR 46.110 and 21 CFR 56.110 within the category. This approval is valid for one year from the date of this letter for **100 (ONE HUNDRED) participants** and it expires on **10/30/2015**.

Any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918 within 48 hours of the incident. Any change(s) to this protocol must be approved by the IRB. The MTSU HRP defines a "researcher" as someone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to complete the required training. New researchers can be amended to this protocol by submitting an Addendum request researchers to the Office of Compliance before they begin to work on the project.

Completion of this protocol **MUST** be notified to the Office of Compliance. A "completed research" refers to a protocol in which no further data collection or analysis is carried out. This protocol can be continued up to **THREE** years by submitting annual Progress Reports prior to expiration. Failure to request for continuation will automatically result in cancellation of this protocol and you will not be able to collect or use any new data.

All research materials must be retained by the PI or the faculty advisor (if the PI is a student) for at least three (3) years after study completion. Subsequently, the researcher may destroy the data in a manner that maintains confidentiality and anonymity. IRB reserves the right to modify, change or cancel the terms of this letter without prior notice. Be advised that IRB also reserves the right to inspect or audit your records if needed.

Sincerely,

Institutional Review Board
 Middle Tennessee State University