Understanding the rainbow:

Hispanic girls and their peers' relative risks for mental health and AOD problems

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Abstract

This paper examines mental health and alcohol and other drug (AOD) use by US and Indiana Hispanic high school girls, comparing them to other non-White and White female peers. It also seeks to understand associated factors that contribute to or defend against the problem. This research takes a multidisciplinary approach drawing from statistical analysis, public health, cultural studies, psychology, child development, and family studies. Results for Indiana found that Hispanic high school females vastly surpass White non-Hispanic females for the selected mental health and AOD variables. Results also found that, overall, both Hispanic and Black high school females in Indiana have more elevated risk factors compared to Whites, and that Hispanic high school females showed more elevated risk factors than Blacks or Whites. Similar analyses were then performed for the nation as a whole. The second part of the presentation looks for commonalities and differences between these groups—using lenses like cultural beliefs and traditions, gender roles, real or perceived discrimination, social conditions, community and family dynamics, and child development—to help explain differences in their mental health and AOD use. Learning objectives: Users of data will see how statistics can mislead as well as inform and ways to test validity. Public servants will increase their cultural competency to inform their librarianship and service to clients. Substance abuse specialists will further their understanding of how determinants of health, particularly social determinants and adverse childhood experiences, impact substance abuse related conditions and behaviors.

Keywords
Substance abuse, Suicide, Latinos/Latinas, Adolescents, Mental health

Introduction

The general context of this presentation is the ACRL frame Judit Ward and William Bejarano described here at the conference as the category of "Information Has Value," and specifically "Information has value to solve problems." Understanding the Rainbow builds on research I presented at last year's SALIS conference, comparing Indiana and the U.S. Hispanic high school girls to their White non-Hispanic female classmates. (Seitz de Martinez, 2016b) Today we will examine mental health and alcohol and other drug problems (AOD) among Hispanic girls, comparing them to their White Non-Hispanic peers and also to their Blacks and Multiracial female student peers. We know that substance abuse and mental health are highly linked. We will first examine the problem, and then we will look at factors that contribute to or are associated with it. Only having this knowledge can we hope to select an appropriate strategy to bring about positive change.

The goals of today's presentation are 1) to examine mental health barriers and facilitators in Latina adolescents and 2) to explore factors highly associated with mental health and substance abuse in this population. The method employed is 1) use of data from the 2011 and 2013 YRBS, and 2) a literature review regarding cultural features of risk and protective factors and behaviors, and the determinants of health.

The Learning objectives for this session include: learning how statistics can inform and also mislead; reviewing an available tool with which to test validity; increasing cultural competency ; understanding how determinants of health impact mental health and substance abuse-related conditions /behaviors (e.g., social determinants and adverse childhood experiences); and gaining a greater understanding of Hispanic culture.

Themes derived from a literature review conducted at the outset of this research and which will be addressed by this presentation include: perceived and real discrimination; socioeconomic status as a determinant of access to mental health services; *familismo*/family dynamics as predictor of mental health issues in Latina adolescents Gender expectancy/roles – parents and child; and intergenerational attitudes and beliefs -- parents and child.

Behavior	H>W	Black Female	Hispanic Females	White Females
At least 1 drink Alc Life	X	74.1	77.5	70.6
1st Dr Alc before age 13	X	23.2	25.1	12.5
Current dr Alc	X	33	NA	33.7
Binged	X	7.2	27.4	19.7
Ever use marijuana-Life	X	48.2	44.4	29.7
Used Marij before age 13	X	9	13.1	4.6
Current use Marij	X	26.9	22.9	14
Ever used cocaine	X	5.7	9.6	4.5
Ever used inhalants	X	11.3	16.6	9.7
Ever used ecstasy	X	4.1	11.9	4.9
Ever used heroin	X	1.2	2.3	1.6
Ever used meth	X	3.6	3.3	3.1
Ever used steroids	X	3.7	2.9	2.3
Ever used Rx - w/o Rx	X	12.4	23.9	23
Ever used IV	X	5.2	1.6	1.4
Offered, sold or given illegal drug on school property	X	32	37.5	22.1

Table 1: Indiana High School Females AOD Substance Use Behaviors (%)
Source: CDC, Indiana YRBS, 2011. (Indiana H.S. data for 2013 is not available.)

Table 1 – version 1 shows results from the Indiana YRBS for AOD behaviors for high school females by race/ethnicity. The X's in column 2 show that for every AOD behavior, a greater percentage of Hispanic girls than White girls reported the behavior. The yellow highlight indicates the group with the highest report. You see the Hispanic girls were the highest for all but five behaviors. For those five, the Black females were highest. The data for these variables for Indiana Multi-Racial youth were not available.

Behavior	H>W	Black Female	Hispanic Females	White Females
At least 1 drink Alc Life	x	74.1	77.5	70.6
1st Dr Alc before age 13	x	23.2	25.1	12.5
Current dr Alc	x	33	NA	33.7
Binged	x	7.2	27.4	19.7
Ever use marijuana-Life	x	48.2	44.4	29.7
Used Marij before age 13	x	9	13.1	4.6
Current use Marij	x	26.9	22.9	14
Ever used cocaine	x	5.7	9.6	4.5
Ever used inhalants	x	11.3	16.6	9.7
Ever used ecstasy	x	4.1	11.9	4.9
Ever used heroin	x	1.2	2.3	1.6
Ever used meth	X	3.6	3.3	3.1
Ever used steroids	X	3.7	2.9	2.3
Ever used Rx - w/o Rx	x	12.4	23.9	23
Ever used IV	x	5.2	1.6	1.4
Offered, sold or given illegal drug on school property	X	32	37.5	22.1

Table 1 – version 2: Indiana High School Females AOD Substance Use Behaviors (%) Source: CDC, Indiana YRBS, 2011. (Indiana H.S. data for 2013 is not available.)

Table 1 version 2 adds green highlights for the 2nd highest report of the behavior. For four behaviors the White females were second highest. For this study the primary point is that in every instance, for each behavior, a higher percent of Hispanic females reported these AOD behaviors than did Non-Hispanic White females. The data for these variables for Indiana Multi-Racial youth were not available.

We often have a tendency to believe data reflect the truth. But how can we be sure? One way is to trust statistical analysis used to determine the probability of truth when comparing data across time, like this year to last year, or across groups as we are doing now. Statistical significance is a way to explain to your library patrons not trained in statistics how it can be that although the numbers show one instance or one group greater than the other, the reality may be the opposite, or there may be no difference whatsoever. This matters a lot when it comes time to make decisions about how to allocate resources to address problems.

Statistical significance refers to a difference of such magnitude as to provide confidence that 1) the result did not occur by chance, and 2) the change across time, or the difference between groups of students in this case, was caused by something other than chance.

Researchers use what is called a "p" or "p-value" to describe that the result is true or accurate. A p-value of .05 means that if this survey were conducted 100 times the likelihood of the same results occurring by chance would be equal to or less than 5 in 100. In other words, we have at least a 95% confidence that something other than chance is accounting for this difference – that there really is a difference.

This screen capture from the YRBS web compares Hispanics to Whites for 5 behaviors. There is SS only for one measurement, "Were in a physical fight" with p value of 0.00, which gives the highest assurance that H are more likely than W to have been in a physical fight. For the others you see there is "no SS difference" despite very marked differences in the percentages reported, where more than twice as many Hispanics reported the behavior than did Whites.

Indiana, High School Youth Risk Behavior Survey, 2011

Question	Race	Hispanic	White†	p-value	Hispanic More Likely Than White	White More Likely Than Hispanic	No Difference
Carried a weapon (such as, a gun, knife, or club on at least 1 day during the 30 days before the survey)		16.4 (12.4-21.3) 219	16.9 (14.3-20.0) 2,136	0.81			●
Carried a gun (on at least 1 day during the 30 days before the survey)		8.2 (4.1-15.9) 221	3.9 (2.8-5.2) 2,147	0.11			●
Carried a weapon on school property (such as, a gun, knife, or club on at least 1 day during the 30 days before the survey)		6.4 (2.8-14.0) 223	3.5 (2.6-4.7) 2,142	0.25			●
Were threatened or injured with a weapon on school property (such as, a gun, knife, or club one or more times during the 12 months before the survey)		7.4 (3.6-13.9) 220	6.2 (4.4-8.8) 2,136	0.59			●
Were in a physical fight (one or more times during the 12 months before the survey)		36.3 (29.1-43.9) 218	26.7 (23.9-29.7) 2,116	0.02	●		

Table 2: Indiana All High School Students (Hispanic vs. White) Risk Behaviors (%), 2011
Source: CDC: Youth Online (https://nccd.cdc.gov/youthonline)

Table 1 version 3 adds red highlighting for behaviors where the difference between percentages are statistically significant.

Behavior	H>W	Black Female	Hispanic Females	White Females
At least 1 drink Alc Life	x	74.1	77.5	70.6
1st Dr Alc before age 13	x	23.2	25.1	12.5
Current dr Alc	x	33	NA	33.7
Binged	x	7.2	27.4	19.7
Ever use marijuana-Life	x	48.2	44.4	29.7
Used Marij before age 13	x	9	13.1	4.6
Current use Marij	x	26.9	22.9	14
Ever used cocaine	x	5.7	9.6	4.5
Ever used inhalants	x	11.3	16.6	9.7
Ever used ecstasy	x	4.1	11.9	4.9
Ever used heroin	x	1.2	2.3	1.6
Ever used meth	x	3.6	3.3	3.1
Ever used steroids	x	3.7	2.9	2.3
Ever used Rx - w/o Rx	x	12.4	23.9	23
Ever used IV	x	5.2	1.6	1.4
Offered, sold or given illegal drug on school property	x	32	37.5	22.1

Table 1 – version 3: Indiana High School Females AOD Substance Use Behaviors (%)
Source: CDC, Indiana YRBS, 2011. (Indiana H.S. data for 2013 is not available.)

While the x's in column 2 indicate that for every AOD behavior a higher percentage of IN Hispanic females than White Non-Hispanic females reported the behavior, the difference is statistically significant for only three behaviors (1st drank alcohol before age 13, ever used marijuana in lifetime, and used marijuana before age 13). The data for these variables for Indiana Multi-Racial youth were not available.

Behavior	B>W	Black Female	Hispanic Females	White Females
At least 1 drink Alc Life	x	74.1	77.5	70.6
1st Dr Alc before age 13	x	23.2	25.1	12.5
Current dr Alc	NA	33	NA	33.7
Binged		7.2	27.4	19.7
Ever use marijuana-Life	x	48.2	44.4	29.7
Used Marij before age 13	x	9	13.1	4.6
Current use Marij	x	26.9	22.9	14
Ever used cocaine	x	5.7	9.6	4.5
Ever used inhalants	x	11.3	16.6	9.7
Ever used ecstasy		4.1	11.9	4.9
Ever used heroin		1.2	2.3	1.6
Ever used meth	x	3.6	3.3	3.1
Ever used steroids	x	3.7	2.9	2.3
Ever used Rx - w/o Rx		12.4	23.9	23
Ever used IV	x	5.2	1.6	1.4
Offered, sold or given illegal drug on school property	x	32	37.5	22.1

Table 1 – version 4: Indiana High School Females AOD Substance Use Behaviors (%)
Source: CDC, Indiana YRBS, 2011. (Indiana H.S. data for 2013 is not available.)

In Table 1 version 4 the 2nd column shows Blacks compared to Whites, and here Blacks have reported higher percentages for most

behaviors but are only statistically significantly more likely than Whites for two behaviors (ever used marijuana during lifetime and currently use marijuana). The data for Indiana Multi-Racial youth were not available.

Table 1 version 5 is the same except column 2 puts an x where Indiana White Non-Hispanic females are more likely than Blacks to report an AOD behavior. There are only four such behaviors and of those only two are at a level that is statistically significant (binged and ever used Rx without a prescription).

So far we have been looking at IN statistics. Now we will look at the US as a whole. You see similarly to Indiana a higher percentage (highlighted in yellow) of US Hispanic females than White Non-Hispanic females report each and every AOD behavior in the survey, hence all the paper refers to non-Hispanic Whites.) It should be noted that Indiana's most recent data is from 2011, whereas national data is available for 2013.

Behavior	W>B	Black Female	Hispanic Females	White Females
At least 1 drink Alc Life		74.1	77.5	70.6
1st Dr Alc before age 13		23.2	25.1	12.5
Current dr Alc		33	NA	33.7
Binged	x	7.2	27.4	19.7
Ever use marijuana-Life		48.2	44.4	29.7
Used Marij before age 13		9	13.1	4.6
Current use Marij		26.9	22.9	14
Ever used cocaine		5.7	9.6	4.5
Ever used inhalants		11.3	16.6	9.7
Ever used ecstasy	x	4.1	11.9	4.9
Ever used heroin	x	1.2	2.3	1.6
Ever used meth		3.6	3.3	3.1
Ever used steroids		3.7	2.9	2.3
Ever used Rx - w/o Rx	x	12.4	23.9	23
Ever used IV		5.2	1.6	1.4
Offered, sold or given illegal drug on school property		32	37.5	22.1

Table 1 – version 5: Indiana High School Females AOD Substance Use Behaviors (%) Source: CDC, Indiana YRBS, 2011. (Indiana H.S. data for 2013 is not available.)

Behavior	H>W	Black	Hispanic	White
At least 1 drink Alc Life	x	66.8	75.6	66.6
1st Dr Alc before age 13	x	18.7	20.2	13.8
Current dr Alc	x	31.3	39.7	35.7
Binged	x	11.5	22.6	21.1
Ever use marijuana-Life	x	45.4	47.6	34.8
Used Marij before age 13	x	6.1	9.8	4.5
Current use Marij	x	27.1	27.4	18
Ever used cocaine	x	1.2	8.1	3.7
Ever used inhalants	x	7.9	14.3	9.1
Ever used ecstasy	x	2.1	10.1	4.6
Ever used heroin	x	0.8	3	1.1
Ever used meth	x	0.5	4.9	2.8
Ever used steroids	x	1.3	3.6	1.8
Ever used Rx - w/o Rx	x	11.1	19.9	18
Ever used IV	x	0.8	2	0.9
Offered, sold or given illegal drug on school property	x	15.6	26.7	17.5

Table 3 – version 1: U.S. High School Females AOD Substance Use Behaviors (%) Source: CDC, US YRBS, Females, High School, 2013 (Indiana data is not available for 2013.)

Behavior	H>W	Black	Hispanic	White	Multi-R
At least 1 drink Alc Life	x	66.8	75.6	66.6	69.6
1st Dr Alc before age 13	x	18.7	20.2	13.8	25.1
Current dr Alc	x	31.3	39.7	35.7	38.1
Binged	x	11.5	22.6	21.1	21.4
Ever use marijuana-Life	x	45.4	47.6	34.8	49.5
Used Marij before age 13	x	6.1	9.8	4.5	9.9
Current use Marij	x	27.1	27.4	18	31.7
Ever used cocaine	x	1.2	8.1	3.7	6.9
Ever used inhalants	x	7.9	14.3	9.1	12.4
Ever used ecstasy	x	2.1	10.1	4.6	5.4
Ever used heroin	x	0.8	3	1.1	2.6
Ever used meth	x	0.5	4.9	2.8	3.9
Ever used steroids	x	1.3	3.6	1.8	2.5
Ever used Rx - w/o Rx	x	11.1	19.9	18	22.5
Ever used IV	x	0.8	2	0.9	2.7
Offered, sold or given illegal drug on school property	x	15.6	26.7	17.5	24.3

Table 3 – version 2: U.S. High School Females AOD Substance Use Behaviors (%) Source: CDC, US YRBS, Females, High School, 2013 (Indiana data is not available for 2013.)

This version includes multi-racial females, creating a discovery of considerable interest, namely that when you include US students who report being of more than two races, they are found to be highest for many behaviors, even higher than the Hispanic girls.

Behavior	H>W	Black	Hispanic	White
At least 1 drink Alc Life	x	66.8	75.6	66.6
1st Dr Alc before age 13	x	18.7	20.2	13.8
Current dr Alc	x	31.3	39.7	35.7
Binged	x	11.5	22.6	21.1
Ever use marijuana-Life	x	45.4	47.6	34.8
Used Marij before age 13	x	6.1	9.8	4.5
Current use Marij	x	27.1	27.4	18
Ever used cocaine	x	1.2	8.1	3.7
Ever used inhalants	x	7.9	14.3	9.1
Ever used ecstasy	x	2.1	10.1	4.6
Ever used heroin	x	0.8	3	1.1
Ever used meth	x	0.5	4.9	2.8
Ever used steroids	x	1.3	3.6	1.8
Ever used Rx - w/o Rx	x	11.1	19.9	18
Ever used IV	x	0.8	2	0.9
Offered, sold or given illegal drug on school property	x	15.6	26.7	17.5

Table 3 – version 3: U.S. High School Females AOD Substance Use Behaviors (%) Source: CDC, US YRBS, Females, High School, 2013 (Indiana data is not available for 2013)

Returning to a consideration of only US Blacks, Whites and Hispanics, this slide adds green for the 2nd highest percentage reporting the behavior. It is interesting because it shows that nationally White Non-Hispanic students are 2nd for most behaviors after Hispanics.

Behavior	H>W	Black	Hispanic	White	Multi-R
At least 1 drink Alc Life	x	66.8	75.6	66.6	69.6
1st Dr Alc before age 13	x	18.7	20.2	13.8	25.1
Current dr Alc	x	31.3	39.7	35.7	38.1
Binged	x	11.5	22.6	21.1	21.4
Ever use marijuana-Life	x	45.4	47.6	34.8	49.5
Used Marij before age 13	x	6.1	9.8	4.5	9.9
Current use Marij	x	27.1	27.4	18	31.7
Ever used cocaine	x	1.2	8.1	3.7	6.9
Ever used inhalants	x	7.9	14.3	9.1	12.4
Ever used ecstasy	x	2.1	10.1	4.6	5.4
Ever used heroin	x	0.8	3	1.1	2.6
Ever used meth	x	0.5	4.9	2.8	3.9
Ever used steroids	x	1.3	3.6	1.8	2.5
Ever used Rx - w/o Rx	x	11.1	19.9	18	22.5
Ever used IV	x	0.8	2	0.9	2.7
Offered, sold or given illegal drug on school property	x	15.6	26.7	17.5	24.3

Table 3 – version 4: U.S. High School Females AOD Substance Use Behaviors (%) Source: CDC, U.S. YRBS, Females, High School, 2013 (Indiana data is not available for 2013)

Version 4 adds back the US Multi-racial youth and we find that for every behavior a greater percent of Hispanics and Multi-racial youth report than do Black or White students.

Version 5 adds the factor of statistical significance (SS). We see in the column of H>W that for nearly every behavior, US Hispanic female HS students are statistically significantly more likely than White non-Hispanic female students to engage in each behavior. In the far right column red indicates those behaviors where multi-racial females are found to be more likely than White non-H females to report the behavior. There are only four for which there is a statistically significant difference between the Multi-Racial and the White female students. It remains true that in every case, the Hispanic females and multi-racial females are more likely than the White non-Hispanic females to report AOD behaviors.

Behavior	H>W	Black	Hispanic	White	Multi-R
At least 1 drink Alc Life	x	66.8	75.6	66.6	69.6
1st Dr Alc before age 13	x	18.7	20.2	13.8	25.1
Current dr Alc	x	31.3	39.7	35.7	38.1
Binged	x	11.5	22.6	21.1	21.4
Ever use marijuana-Life	x	45.4	47.6	34.8	49.5
Used Marij before age 13	x	6.1	9.8	4.5	9.9
Current use Marij	x	27.1	27.4	18	31.7
Ever used cocaine	x	1.2	8.1	3.7	6.9
Ever used inhalants	x	7.9	14.3	9.1	12.4
Ever used ecstasy	x	2.1	10.1	4.6	5.4
Ever used heroin	x	0.8	3	1.1	2.6
Ever used meth	x	0.5	4.9	2.8	3.9
Ever used steroids	x	1.3	3.6	1.8	2.5
Ever used Rx - w/o Rx	x	11.1	19.9	18	22.5
Ever used IV	x	0.8	2	0.9	2.7
Offered, sold or given illegal drug on school property	x	15.6	26.7	17.5	24.3

Table 3 – version 5: U.S. High School Females AOD Substance Use Behaviors (%) Source: CDC, US YRBS, Females, High School, 2013 (Indiana data is not available for 2013)

We now turn our attention to mental health data, namely behaviors surveyed on the YRBS that are related to depression and suicide among these same students. Table 4 version 1 shows in yellow the Indiana group reporting the highest percentage for each of the five variables: felt sad or hopeless, seriously considered attempting suicide, made a plan about how they would attempt suicide, attempted suicide, and attempted suicide that resulted in an injury, poisoning or overdose that had to be treated by a doctor or nurse. You see Hispanics have higher percentages at a statistically significant level than the White students for all five, and Blacks exceed Hispanics for one variable (Felt sad or hopeless).

Behavior	H>W	Black	Hispanic	White	Multiple Race
Felt sad or hopeless	x	43.1	36.5	32.6	NA
Seriously considered S	x	29.2	30.2	19.5	NA
Made a plan	x	17.4	27.2	12.4	NA
Attempted	x	NA	15.6	9.2	NA

Table 4 version 1: Indiana High School Females Depression/Suicide-Related Behaviors (%)

Behavior	H>W	Black	Hispanic	White	Multiple Race
Felt sad or hopeless	x	43.1	36.5	32.6	NA
Seriously considered S	x	29.2	30.2	19.5	NA
Made a plan	x	17.4	27.2	12.4	NA
Attempted	x	NA	15.6	9.2	NA
Attempt w/ injury	x	NA	5.2	3.5	NA

Table 4 version 2: Indiana High School Females Depression/Suicide-Related Behaviors (%) Source: CDC, Indiana YRBS, 2011.

This version 2 indicates in green the group that is second highest.

Behavior	H>W	Black	Hispanic	White	Multiple Race
Felt sad or hopeless	x	43.1	36.5	32.6	NA
Seriously considered S	x	29.2	30.2	19.5	NA
Made a plan	x	17.4	27.2	12.4	NA
Attempted	x	NA	15.6	9.2	NA
Attempt w/ injury	x	NA	5.2	3.5	NA

Table 4 version 3: Indiana High School Females Depression/Suicide-Related Behaviors (%) Source: CDC, Indiana YRBS, 2011.

This is the same adding Multiracial females and also in green the second highest. Note that Blacks are neither highest or second highest for any of the five variables.

Behavior	H>W	Black	Hispanic	White	Multi-R
Felt sad or hopeless	x	35.8	47.8	35.7	52.6
Seriously considered S	x	18.6	26	21.1	33.1
Made a plan	x	13.1	20.1	15.6	27.5
Attempted	x	10.7	15.6	8.5	14.8
Attempt w/ injury	x	3.2	5.4	2.8	6.7

Table 4 version 4: Indiana High School Females Depression/Suicide-Related Behaviors (%) Source: CDC, Indiana YRBS, 2011.

This is the same adding Multiracial females and also in green the second highest. Note that Blacks are neither highest or second highest for any of the five variables.

Behavior	H>W	Black	Hispanic	White	M-R>W Multi-R
Felt sad or hopeless	x	35.8	47.8	35.7	52.6
Seriously considered S	x	18.6	26	21.1	33.1
Made a plan	x	13.1	20.1	15.6	27.5
Attempted	x	10.7	15.6	8.5	14.8
Attempt w/ injury	x	3.2	5.4	2.8	6.7

Table 4 version 5: Indiana High School Females Depression/Suicide-Related Behaviors (%) Source: CDC, Indiana YRBS, 2011.

This version 5 of Table 4 offers an indication of those variables for which Multi-racial females are also statistically significantly more likely than White females to report the behaviors.

This is a screen capture showing the actual page from YRBS web site that shows statistical significance of Hispanic females more likely than White females for specific variables. It is easy to use this web site. Just go to the web site, select the variables you wish to see, and you can compare two of them for statistically significant difference.

United States, High School Youth Risk Behavior Survey, 2013
Among Female Students

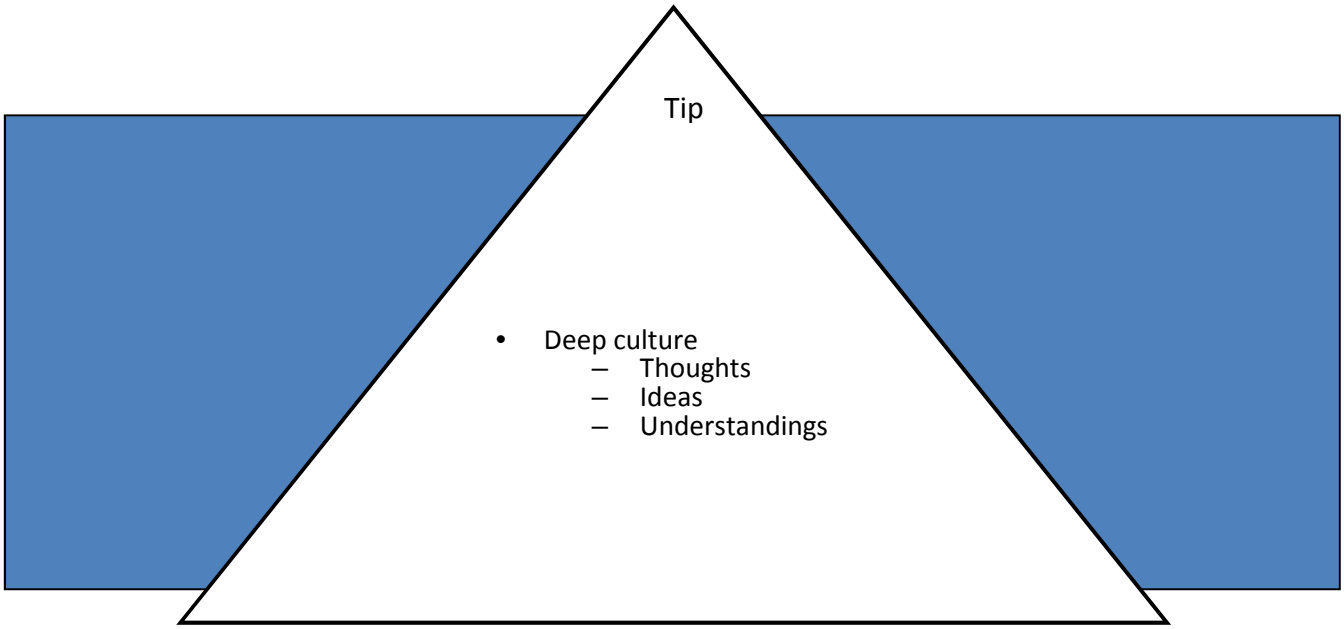
Question / Race	Hispanic	White†	p-value	Hispanic More Likely Than White	White More Likely Than Hispanic	No Difference
Felt sad or hopeless (almost every day for 2 or more weeks in a row so that they stopped doing some usual activities during the 12 months before the survey)	47.8 (44.5-51.3) 1,657	35.7 (32.9-38.6) 2,595	0.00	●		
Seriously considered attempting suicide (during the 12 months before the survey)	26.0 (23.7-28.5) 1,657	21.1 (18.7-23.7) 2,591	0.01	●		
Made a plan about how they would attempt suicide (during the 12 months before the survey)	20.1 (17.2-23.5) 1,654	15.6 (13.4-18.2) 2,595	0.02	●		
Attempted suicide (one or more times during the 12 months before the survey)	15.6 (13.0-18.8) 1,450	8.5 (7.2-10.0) 2,473	0.00	●		
Attempted suicide that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse (during the 12 months before the survey)	5.4 (4.1-7.2) 1,410	2.8 (2.3-3.6) 2,447	0.01	●		

The next section of this paper looks at reasons why – that is, contributing factors that are associated with the statistics we have been viewing. Again we focus on Hispanic girls, who have been well documented in the research to have greater mental health problems than White females. Why do Hispanic girls in Indiana and the U.S. have higher rates of substance abuse and depression than the non-Hispanic youth? Why do Hispanic girls have

higher rates than Hispanic boys of suicidal ideation and suicide attempts? This discussion is related to cultural competency and emphasizes the need for us to take cultural factors into consideration in working with this very diverse population.

Culture

What is culture? "The shared values, norms, traditions, customs, arts, history, folklore, and institutions of a group of people." (Orlandi, 1992)



According to Fatiu and Rodgers (1984), whose work on the iceberg concept of culture is referenced by Sharroky (2015), nine-tenths of culture is below the surface. Examples of the tip or "in awareness" parts of culture are: "dress, skin color, gender, language, fine arts, literature, religion, food, geography and music." (Fatiu & Rodgers, 1984, p. 21) Below the surface are shallow culture, the unspoken rules that hold high emotional value, and further below lies deep culture, unconscious rules with intense emotional value. Examples of shallow culture include courtesy, eye contact, and facial expressions, and of deep culture, concept of "self," past and future, kinship, concepts about fairness, power distribution, the meaning of life, appropriate expressions of emotions, appropriate forms of communications, how to show respect, non-verbal communication.

Some important Latino cultural concepts include the following:

Familismo -- placing the family as priority

Marianismo -- women idealized, Related to domestic context.

Machismo -- Role of responsibility for welfare of family, especially money. Related to authority within the family

Dignidad – Importance of maintaining dignity

Personalismo -- Value of human warmth expressed through valuing the individual

Respeto – Importance of acknowledging hierarchy of gender roles within family and societal context

Cultural Identity includes all of the elements listed by Pederson et al in Inclusive Cultural Empathy: race, ethnicity, language, religion/spirituality, sex/gender, family migration history, sexual affectional orientation, age/cohort, physical/mental

capacity issues, socioeconomic situation and history, education and trauma history. (Pederson et al, 2008)

In terms of cultural values, mainstream U.S. culture can be generally contrasted with Eastern, Latino and other cultures as follows. In the area of family issues, mainstream U.S. emphasizes the nuclear, biological family, whereas Eastern and Latino cultures emphasize the extended family. With regard to social connectivity, U.S. mainstream culture emphasizes independence versus Eastern and Latino emphasis on interdependence. Contrasting U.S. mainstream to Eastern and Latino cultures, the emphases are for social obligation to self, versus to family and society; for social perspective, individualistic versus collectivistic; in relation to authority, to challenge it rather than to accept it; with relation to parents, independence at adulthood versus ongoing reverence; with relationship to perspectives on time, to be on time versus letting things happen in due time; and with relationship to negative motivators, to try to avoid guilt rather than trying to avoid shame. These are, of course, generalizations not universally applicable but based in traditions and long-time cultural practices. (Leake, D. & Black, R. 2005)

Whether working in mental health or prevention, working with members of a culture different from your own, you want to demonstrate Inclusive cultural empathy, which is: a lens through which helping professionals can view themselves, their clients, and the very construct of the helping relationship. (Pedersen, et al, 2008).

Next we turn to a discussion of additional contributing factors, identified through the literature review, that help explain the data we have been examining. The first contributing factor is discrimination -- perceived and real discrimination. Researchers find that post traumatic stress from the experience of discrimination leads to the use of gateway drugs and deviant behaviors and also how it has a negative impact on academic adjustment and achievement. (Cheng & Mallinckrodt, 2015; Flores, et al, 2010) Another research finding is that Internalizing emotions felt when experiencing discrimination lead to depression and anxiety. (Ayón, C., et al, 2010)

A related factor is socioeconomic status. Poverty or low SES is found to significantly impact mental health and to be associated with lack of access to mental health services (Alegria, M., Canino, G., Ríos, R., Vera, M., Calderón, J., Rusch, D., & Ortega, A. N. (2002) Patel, et al found that socioeconomic status is associated with sleep disparity, which impacts mental health status. (Patel, et al, 2010)

Research by Alegrá, M, et al. reaffirmed previous findings that, generally speaking, "the combined effect of poverty and minority status places a person at a higher risk of reduced access to mental health services," For African Americans, however, poverty status does not make the access worse. Rather Blacks at any income level were less likely to use mental health services. The article suggests that lack of financial resources for even modest insurance co-pays, mistrust due to mistreatment and experiences of racism, and geographic differences in policies or systems, and lack of minority providers may contribute to this circumstance. (Alegria, et al, 2002)

In the case of Latinos, poverty was found to be associated with less use of mental health specialty care to a greater extent than is true for non-Latino Blacks or Whites. For reasons, the authors point to lack of English language fluency, cultural differences, less access to Medicaid services, less recognition of mental health problems, and inferior quality of mental health care for Latinos. The authors point out that "If a patient with limited English proficiency cannot gain access to a bilingual provider, he or she may not seek specialty care." (Alegria, et al, 2002) Even where there is a translator in the room or on the telephone, the quality and intimacy of the interaction suffer greatly. Latino cultural emphasis on being self-reliant as a copy mechanism tends to discourage seeing mental health treatment and also foster a lack of recognition of need or of perceived need for mental health care. Like Blacks, bad experiences or nonproductive experiences in the health care system may mean the people see little or no benefit in pursuing treatment. Latinos are also

underrepresented in the mental health profession. Environmental factors also include such things as the person's "subjective social class, perceived placement in the community, and relative deprivation." (Alegria, et al, 2002)

Depression and family dynamics, family function

Latina adolescents have been found to be at especially high risk for depression. (Balis and Postolache, 2008; Céspedes and Huey, 2008; and Guiao and Adams Thompson, 2004)

Milburn, et al found that Family dynamics are a predictor of mental health for girls and that the balance of family support vs. family conflict are significant factors related to their mental health. (Milburn, et al, 2010) Sirin, et al found that 1st generation Latino youth experience a higher level of acculturation stress and that this stress contributes to disharmony at home and in school. (Sirin, et al, 2013).

Acculturation Stress

First and second generations of Latino immigrants experience a period of acculturation, which refers to "the process of adaptation that occurs when distinct cultures come into sustained contact." (Organista, 2010) Stresses from acculturation take a variety of forms and may include learning a new language, social norms and family dynamics, creating increased risks for depression, anxiety and suicide. (Potochnick and Perreira, 2010; Forster, et al, 2013) A phenomenon known as "role reversal" can also occur during this transition period, where children, who learn a new language and new customs and systems quicker than their elders, take on parental roles, translating for parents and guiding them through the new culture's institutions, procedures and protocols, provoking intergenerational conflict and disrupting family functioning and the parent-child relationship. (Frabutt, 2006) Immigrants in this process of cultural adaptation are also at increased risk of experiencing perceived discrimination, a risk factor for mental health problems like depression and suicide. (Chou, 2012; Seaton, et al, 2008; Tummala-Narra and Claudius, 2013) Smokowski, et al, report in their research that for Hispanic female adolescents the level of acculturation determined the extent to which Latinas felt stress regarding the expectations of their parents' culture of origin and the expectations of mainstream American culture. (Smokowski, 2009).

Gender roles are powerful cultural traditions. Traditional Hispanic roles for boys are more similar to U.S. masculine values. Referred to as machismo, Latino males are to cultivate and exhibit attributes of strength, dignity, respect and courage, and to financially sustain and protect their family. The cultural difference in gender roles is more extreme for females, whose traditional role model, referred to as marianismo, is the mother of Jesus, calling for a high moral code, prioritizing the needs of others over her own, being self-sacrificing, not asking for help, and refraining from discussing personal problems outside of the home or family. (Seitz de Martinez and Adams, 2016a) Given the importance of family (familismo) in Latino culture and that youth acculturate faster than adults, girls are particularly impacted by the discrepancy in gender role expectations between parents and children. When family dysfunction is added to the equation, the likelihood of parent-child conflict, adolescent depression and suicide-related behaviors increases. (Balis and Postolache, 2008; Céspedes and Huey, 2008). In fact, evidence suggests that for Latina adolescents "the perceived quality of mother-daughter relations may be more predictive of adolescent suicide attempts." (Cash and Bridges, 2009) In Indiana, adolescent Hispanic girls were found to be affected more than boys by certain risk factors, such as gender role discrepancy and acculturation stress, placing them at higher risk than boys for alcohol and other drug use, and binge drinking. (Vaughan, et al, 2015). These data reported here indicate Hispanic female high school students in Indiana report thinking about and planning to die by suicide at higher rates than White female students even though they are not reporting more sadness.

Acculturation stress may play a role in explaining the higher rate of substance abuse and mental health issues, including suicide ideation and attempted suicides among Hispanic adolescents compared to non-Hispanic youth. It can weaken the family cohesion and infrastructure increasing adolescents' risk for drug use, aggressive behaviors, and falling victim to discrimination via bullying, which exacerbates depression. Sirin, et al report that greater exposure to acculturative stress leads to depressive symptoms, including feelings of being withdrawn and being somatic and suffering from anxiety. (Sirin, et al, 2013)

Another stress provoker can be documentation status for immigrants and their families, concerned for self and/or undocumented family members. Goldston, et al, found that Hispanics/Latinos may hesitate to seek mental health services due to fear of deportation, lack of trust in service providers, or anxiety and fear of law enforcement. (Goldston, et al, 2008)

Conclusions

Hispanic girls are at higher risk of mental health problems and exhibit related risk factors (AOD, depression and suicide-related). Hispanics and multi-racial youth are, in general, are at higher risk than non-Hispanic Whites. Contributing (intervening/environmental) factors for Hispanics include the impacts of acculturation that disproportionately affect Hispanic girls (gender role discrepancy in context of family dysfunction). Contributing (intervening/environmental) factors for Hispanics and multi-racial youth can include the social determinants of health (discrimination, poverty, family dysfunction). In order to understand and address these problems, cultural competency is required. We have examined aspects of Hispanic culture in general terms and in some specifics. We've looked at some ways cultural competency, in general, can be applied in the field of mental health (e.g, cultural empathy, cultural identity, cultural learning) and then taken a closer look in terms of Hispanic culture. We have seen the value of statistics in sorting out risk levels and also that the significance of the numbers must be validated and can lead to false assumptions. We've looked at one way to test the validity of seeming differences, based on statistical differences, by checking the "statistical significance," which measures the degree of probability that the difference is real, is true, assigned a p-value. We use used the CDC, YRBS stats to demonstrate.

Limitations and challenges associated with this research include a lack of data (e.g., regarding immigrants' number of years in the US, preferred language and language spoken at home, and documentation status) and a need for more research on the interaction between the impacts of these thematic factors and substance use (ATOD) and mental health. Other limitations and challenges include the wide diversity within Latino cultural groups, e.g., immigrant versus non-immigrant, and the many nationalities, diversity of socioeconomic status and education, urban versus rural background, and the extent to which individuals benefit from a supportive community (their degree of isolation).

Further research is recommended into the discovery of considerable interest arising from this research, namely that when you include U.S. students who report being of more than two races, they are found to be highest reporters of many behaviors, even higher than the Hispanic girls. The findings reported here provoke research questions about what impact does discrimination and its impacts on SES, education and mental health bring to bear on AOD behaviors? And regarding the potential role of coping skills, traditionally passed on within the African American community, in reducing risk of AOD behaviors, and comparison with Hispanic, immigrant, and multi-racial families and youth who face real and perceived discrimination without the benefit of these skills.

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