THERE IS LIFE POST-DIAGNOSIS: HOW HISPANIC ADOLESCENTS ADJUST TO LIVING WITH TYPE 2 DIABETES

PRESENTED BY:
JOSHUA MELLO

WHAT WE'VE SEEN (IN CLASS)

- Biopsychosocial model
- Obesity
- Diabetes
- Depression
- Treatment adherence
- Religious coping (briefly)
- Metabolic control
- Quality of life
- Ethnicity/SES
- Genetics

National Population Projections Released 2008 (Based on Census 2000)

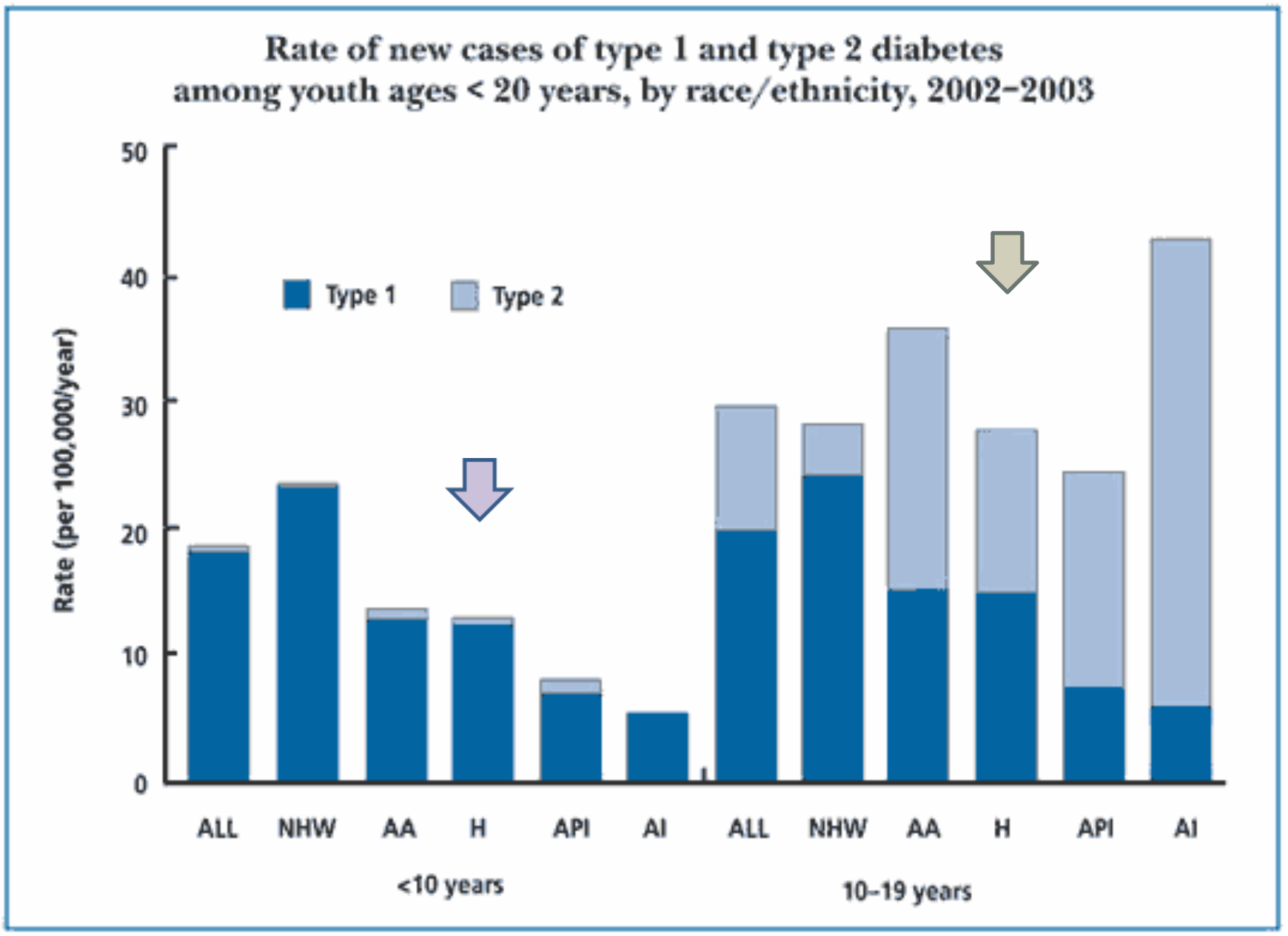
Table 8. Projected Components of Change by Race and Hispanic Origin for the United States: 2010 to 2050

(Numbers in thousands)

Race and Hispanic Origin[1]	2010	2020	2030	2040	2050
NATURAL INCREASE	1,682	1,723	1,542	1,385	1,403
.One race	1,523	1,525	1,300	1,095	1,065
.White	**1,045**	**1,061**	**894**	**742**	**760**
.Black	**317**	**312**	**263**	**230**	**204**
.AIAN	45	46	42	43	44
.Asian	107	98	92	71	48
.NHPI	8	8	9	9	9
.Two or more races	159	198	242	290	338
.Non-Hispanic White alone	**267**	**127**	**-223**	**-507**	**-594**
.Hispanic	**868**	**1,045**	**1,256**	**1,412**	**1,544**

[1] Hispanics may be of any race.

Data from: http://www.census.gov/population/www/projections/2008projections.html



Source: SEARCH for Diabetes in Youth Study.
NHW=Non-Hispanic Whites; AA=African Americans; H=Hispanics; API=Asians/Pacific Islanders; AI=American Indians

QUICK STATS

- T2DM strongly affects minorities
  - CDC National Diabetes Fact Sheet 2007
    - Hispanics have the 2nd highest rates of T2DM with 9.5% living with the condition
  - NDEP Facts about Diabetes 2007
    - Diabetes rates have sky rocketed from 1.5 million in 1958 to 17.9 million in 2007

QUICK STATS

- Religion in Hispanics
  - According to Perl, Greely, & Gray 2006
    - approx 70% of adult Hispanics are Catholic; 20% are Protestant or other Christian
- Rates of Depression in Adolescents with T2DM
  - According to JM Lawrence et al 2006
    - Depressed mood was noted in 22.6% of patients
      - 14% mild; 8.6% moderate or severe
    - Females > Males
    - T2DM > T1DM for males
    - Highest within the 1st year following diagnosis

WHAT ABOUT GENETICS?

According to the ADA's *Genetics of Diabetes* Page

- Genetics is the strongest risk factor for T2DM
  - ***If they're living a Western lifestyle*** (diet high in fat & low in complex carbs and fiber; little exercise)
  - Obesity is a strong risk factor especially for adolescents and is common in Western lifestyles
  - Risk of getting T2DM:
    - One parent (diagnosed <50yrs): 1 in 7
    - One parent (diagnosed >50yrs): 1 in 13
    - Both parents: 1 in 2

WHAT I'VE FOUND

- Depression
  - Associated with poorer glycemic control, increased diabetes-related complications, and poorer treatment adherence
    - C. Chiu, A.E. Linda, A. Wray, AE Elizabeth, A. Beverly, AE Oralia, G. Dominic (2010); H. Lee, D. Chapa, et al (2009); M.R. DiMatteo, H.S. Lepper T.W. Croghan (2000); H. Park, Y. Hong, H. Lee, E. Ha, Y. Sung (2004)
- Quality of Life
  - Martinez et al 2008 found
    - QOL was not significantly associated with treatment adherence by itself and recommend combining it with other variables
  - QOL, depression, and metabolic control were correlated
    - KD Hesketh, MA Wake, FJ Cameron (2004); H. Park, Y. Hong, H. Lee, E. Ha, Y. Sung (2004)

WHAT I'VE FOUND

- Metabolic Control
  - Worse transient glycemic control was associated with greater stress and treatment nonadherence
    - M. Peyrot, J.F. McCurry, D.F. Kruger 1999
  - Adherence to T2DM medication regimens was strongly associated with metabolic control in indigents
    - J.M. Schectman, M.M. Nadkarni, J.D. Voss 2002
  - Good control was associated with higher QoL in T1DM
    - H. Hoey, H. Aanstoot, et al 2001

WHAT I'VE FOUND

- Religious
  - Pargament, Kennel, et al 1988 found
    - Three distinct styles of religious problem solving skills
    - Deferring- God has full control
      - Reliance on external rules, beliefs, and authority
    - Collaborative- work with God for solutions
      - Intimate interactive relationship with God
    - Self-Directing- Person has control
      - God gives them freedom to do direct their own lives
    - Depending on the life situation, one style may be better: i.e. self-directing may be better when problems lie outside of patient control or their coping resources

WHAT I'VE FOUND

- Religion (con't)
  - Farley, Galves, Dickinson, & Diaz Perez 2005
    - Found Mexican citizens to use denial and religion as coping mechanisms
  - Musgrave, EA Allen, GJ Allen 2002
    - Religious beliefs greatly influence attitudes toward life, health, illness, and death
  - Pargament, Koenig, Perez 2000
    - In college students coping with a significant negative life event religious coping accounted for unique measures of adjustment
    - Better adjustment was associated with benevolent religious appraisals, forgiveness, and religious support
    - Poorer adjustment was associated with negative reappraisals of God's power, Spiritual discontent, and a malevolent image of God

WHAT I'VE FOUND

- Religion (con't)
  - Thune-Boyle et al 2006
    - Proper measures of religious coping are necessary; many studies have used poor methods
  - Pargament, Smith, Koenig, Perez 1998
    - Positive religious coping is more beneficial to treatment adherence in patients with severe life stress and chronic illness
  - Lager, J.M. 2006
    - Found religious coping and QOL positively associated in adults with T2DM
  - Siegel, Anderman, Schrimshaw 2001
    - Religion may influence adjustment to illness by providing a different way of thinking, promoting social integration, and enhancing coping resources

WHAT I'VE FOUND

- Religion (con't)
  - Religious coping is associated with increased QOL in patients with:
    - Advanced Cancer (Tarakeshwar et al 2006)
    - HIV/AIDS (Siegel, Schrimshaw 2002)

RESEARCH QUESTIONS

- Do depression, quality of life, metabolic control, and religious coping have a significant impact on predicting treatment adherence rates in Hispanic adolescents with T2DM in the first year?
- Do different religious problem solving styles measured at baseline impact how Hispanic adolescents with T2DM adjust to their disease within the first year?

RESEARCH DESIGN

- 60 Hispanic adolescents with Type 2 Diabetes
- Obtain survey results at baseline, 6, & 12 months
- Q1: Multiple Regression Analysis with:
  - Independent variables:
    - Religious coping
    - Depression
    - Quality of Life
    - Metabolic Control
  - Dependent variable:
    - Treatment adherence
- Q2: S(A) ANOVA
  - I.V.: religious problem-solving style

MEASURING THE VARIABLES

- Religious Coping
  - *Religious Coping- RCOPE* (Pergament et al 2000)
    - A comprehensive religious coping assessment
  - *Religious Problem Solving Scale* (Pergament et al 1988)
  - *Brief Multidimensional Measures of Religiousness and Spirituality* (NIA/Fetzer 1999)
    - Measures spiritual experiences, religious practices, congregational support, and forgiveness
- Quality of Life
  - *Pediatric Quality of Life Inventory (PedsQL)*
  - Varni JW, Seid M, Rode CA 1999
- Depression
  - *Center for Epidemiologic Studies Depression Scale (CES-D)*
  - J A Gavard, P J Lustman, and R E Clouse 1993

MEASURING THE VARIABLES

- Metabolic Control
  - *Obtain HbA1c* (glycated hemoglobin) levels from patient's medical chart
- Treatment Adherence
  - *Summary of Diabetes Self-Care Activities (SDSCA)*
    - Observes: general diet, specific diet, exercise, blood-glucose testing, and smoking
    - DJ Toobert, SE Hampson, & RE Glasgow 2000
  - *Medical Outcomes Study (MOS) Measures of Patient Adherence*
    - R.D. Hays 1992

EXPECTED RESULTS

- For my first research question, I expect to find that metabolic control, depression, quality of life, and religious coping will significantly predict treatment adherence rates.
- For my second research question, I expect to find more significant findings between religious coping and QOL, metabolic control, treatment adherence, and depression as follows:
  - Collaborative> Self-directing> Deferring
  - As I expect higher rates of (inter-)active religious coping to play a larger part: less depression

FUTURE RESEARCH

- Religious interventions
- Pre-diabetes: Does religion act as a protective factor?