Over about 15 months in 1990-91, we recruited 570 families to participate in what was then called the Wisconsin Maternity Leave and Health Project. Roughly 80% were from the Milwaukee area and 20% from the Dane County area. The goal of that study, funded by NIMH, was to learn how women balance work and family across the transition to parenthood. We continued to follow the families and, when we were past the time of maternity leave, we renamed the project the Wisconsin Study of Families and Work (WSFW). As children in the study grew, and because we are developmental psychologists, we became very interested in them. The study became a project on child development and, later, adolescent development. Along the way, we collected data in many ways – sometimes in interviews during home visits, by paper questionnaires and online questionnaires, through videotaping of mother-child interactions, by collecting DNA from cheek swabs, by collecting saliva to assay for hormones, and by fMRI scans. Today roughly 300 families remain in the study, which represents a remarkable amount of loyalty to a study that has continued for more than 20 years.
YOUR PARTICIPATION:
The adolescents in the Wisconsin Study of Families and Work either turned 20 last year or are turning 20 this year. For those of you attending college, about half are in your junior year (we call you Cohort 1) and half are in your sophomore year (we call you Cohort 2). In Summer 2011, people in Cohort 1 completed questionnaires online and participated in life history interviews by phone. We will repeat that in Summer 2012 for those of you in Cohort 2. Cohort 2 people can expect to begin hearing from us in May. We are also planning additional future activities; we’ll be in touch with you as these plans are finalized. If you have any questions at any time, you can email Dr. Janet Hyde, jshyde@wisc.edu.

PLEASE SEND US YOUR BEST CONTACT INFORMATION!

We like to contact you by email, text, or phone. Please be sure that we have your up-to-date email address and phone number. If the email address that we sent this newsletter to is accurate, there is no need to contact us. But if you want to update your email address or phone number, please email the information to Rachel Salk, wsfw@psych.wisc.edu.

RESEARCH ARTICLES:
Thanks to your participation and your loyalty to the WSFW project, we have a wealth of data that will help us understand adolescent development. We continue to work on more research articles to convey these findings to the community of scientists.

Much of our current work is focused on depression. For example, we are currently investigating whether certain genes are risk factors in order to better understand the emergence of the gender difference in depression in adolescence. We are also taking advantage of the rich longitudinal data to better understand the development of depression. We are using sophisticated statistical techniques to identify groups of people who increase in depressive symptoms across adolescence, those who remain low throughout, and those who actually decrease. Then we will be able to figure out what variables might predict someone experiencing increasing depression symptoms in adolescence.

In other work, we are examining longitudinal patterns of mental health problems (like anxiety and ADHD, in addition to depression); the effects of childhood versus adolescent stress exposures; cortisol functioning; adolescent substance use; and the influence of socioeconomic status on child and adolescent health. We are also studying child and adolescent obesity and the relationships among cortisol and pubertal hormones across development. Finally, we are studying the development of the adolescent brain by pairing MRI results with the extensive data collected throughout the study.
In an episode of the television show *The Simpsons*, Homer’s response to his wife’s desire to take a calculus test is “the only math you need is you plus me equals forever.” This reply reflects the common attitude that math is a more valid pursuit for boys. However, in the past few decades, career choices by men and women have begun to challenge the age-old stereotypes. But is this recent phenomenon visible in the average American family? Since children learn gender roles from parents, we wondered how modern moms differ from one another in their beliefs about gender-specific abilities, and whether these attitudes are linked to subtle differential treatment of sons and daughters in stereotype-prone areas. And what could be a more perfect area to examine this question than math?

So where do you fall into this picture? In 5th grade, most of you participated in a videotaped math task with your mother. In a 2008 study we used these tapes along with information about mothers’ perceptions of their children’s math achievement, gender attitudes, math education, and your own ideas about math. We found that families are becoming less stereotyped in their gender beliefs, as most WSFW mothers held egalitarian attitudes about the math achievement of boys and girls. However, although moms wanted to see both boys and girls succeed in math, they still believed that math was more difficult for girls. Additionally, boys rated themselves better at math and had higher expectations for success at math than girls did. The stereotypes are not completely dead.

What does this mean for the way mothers actually help their children in math? Through the math task, we found that mothers who were more traditional in their gender-role attitudes actually gave more instruction to girls, and this effect was especially large for moms highly educated in math. We believe this is because mothers are acting on the stereotype that math is more difficult for girls, giving daughters more support than might actually be necessary.

Of course, there are several positive results to take away from this study. WSFW girls performed just as well as boys on the math task and had equivalent math grades in school. Furthermore, mothers treated sons and daughters similarly on average for most behaviors that we coded. And education remains an important factor, as high maternal levels of math education had a positive effect on your own math attitudes. When all is said and done, it appears that the tides of gender stereotypes are shifting; you have a world of opportunities available to you, and math is no longer solely a male domain.


**Another WSFW Article on this topic you might find interesting:**

Gender-Stereotyped Socialization, Rumination, & Depression in Adolescence

Two times as many women in the US suffer from depression as men. Interestingly, though, boys and girls experience similar rates of depression until adolescence, when the gender difference in depression emerges. The mechanisms by which this gender difference arises have puzzled scientists and been the focus of much research over several decades.

Previous research established that the gender difference in depression is due, in part, to a gender difference in depressive rumination, which also emerges in adolescence. Rumination is an involuntary coping response to a stressful event, in which an individual thinks about the stressful event and their own bad mood repetitively. With depressive rumination, individuals focus specifically on their depression, its symptoms, causes, meanings, and consequences. What makes girls begin to ruminate more in adolescence than boys? Our study asked if mothers’ traditional, gender-stereotyped socialization practices might play a role.

In a study published in 2010, we confirmed our hypotheses. As a participant, you completed assessments indicating your femininity or masculinity and your tendency to ruminate in the face of stressful events. Half of our sample also participated in a mother-child math task at age 11, which we used to measure maternal responses to child stress. Your mothers also provided assessments of their own gender-role attitudes, whether traditional or more progressive.

We hypothesized that rumination could represent a gender-stereotyped coping behavior. In our society, certain negative emotions (such as sadness or anxiety) and the expression of these emotions are considered stereotypically feminine. As such, we thought that mothers, especially those with traditional gender role attitudes themselves, might encourage emotion expression in their daughters, but not their sons, during times of stress. We also hypothesized that children who identified as more feminine would tend to ruminate more.

Our results found just that. A gender difference in rumination had indeed appeared by age 15, with girls ruminating more than boys. That gender difference was accounted for by two factors. The first was femininity scores; teens who scored higher on the femininity scale were more likely to ruminate. Stating the obvious, girls had much higher femininity scores than boys did. The other factor was mothers’ encouragement of emotional expression following stress in the math task. A mother who did this might say, “Are you feeling sad? Why?” Mothers were significantly more likely to do this with daughters than with sons. In other words, children developed depressive rumination, in large part, from their femininity and/or their mother’s encouragement of emotion expression. Furthermore, mothers with more traditional gender-role attitudes were especially likely to encourage emotion expression in their daughters. The results support the notion that rumination is a gender-stereotyped behavior that results largely from socialization, in which girls are encouraged to behave in traditionally feminine ways. Some mothers may unintentionally be putting their daughters at risk for depression.

Parents’ Stress and Epigenetics

We recently published some work in an area of research called epigenetics. Whereas genetics focuses on the underlying sequence of DNA, *epigenetics* looks at the expression of genes. Epigenetics often examines methylation, in which a chemical group attaches to parts of the DNA. This process acts like a dimmer on gene function in response to social and physical environments.

Using the DNA cheek swabs that some WSFW teens provided around age 15, we found that higher stress levels reported by mothers during their child’s first year correlated with methylation levels on 139 different DNA sites in adolescents. We also discovered 31 sites that correlated with fathers’ higher reported stress during their child’s preschool years (3½ and 4½ years old).

In addition, we found that fathers’ stress level is more strongly associated with DNA methylation in daughters, while mothers’ stress level has an effect with both boys and girls. This reinforces other research showing that fathers’ lack of participation in parenting may be associated with an earlier onset of puberty in girls but not in boys.

These results underscore the importance of gender and timing in understanding child development. As is often the case, some parenting effects appear to have similar outcomes for girls and boys, but others differ based on the gender of children and parents as well as the period of development under consideration.

In general, none of the genes that had methylation levels correlated with stress were among those best known to play a role in influencing a person’s behavior or reaction to environmental stress. That said, we did find some genes that had a consistent change in methylation levels at more than one site on the DNA. These included one involved in the production of insulin, the hormone that regulates blood sugar levels, and three other genes that may be involved in brain development.

Source:

Some of our research has focused on cortisol, the stress hormone that we have measured in saliva for many years. In one study, we examined cortisol from ages 9 to 15 to understand ways that cortisol levels and daily patterns changed over this period of development. Cortisol has a 24-hour cycle, in which it is usually highest shortly after waking and then declines during the day. As a result, we can look at both cortisol’s morning level and its circadian rhythm, or how it changes over the course of the day. We found that as youth got older and more physically developed, their cortisol levels were higher and their circadian rhythms were flatter (that is, there was less of a decline over the day). We also found that, on average, girls had higher cortisol levels and faster declines across the day than boys.

We then extended these findings to consider how parents’ stress during the infancy and preschool periods influenced these cortisol patterns. We found that children exposed to higher levels of early life stress showed greater changes in both the morning level and daily rhythm of cortisol, and greater developmental changes from ages 9 to 15 years. We also found that specific types of early family experiences had varying effects. For example, early exposures to mothers’ depression and family expressed anger were particularly influential in defining children’s cortisol functioning.

We also considered how cortisol patterns varied with children’s mental health. Across all youth, there was little evidence that cortisol was linked to mental health. However, children exposed to both early maternal depression and family expressed anger showed a lowering of cortisol activity when they were also showing increased symptoms such as depression, anxiety, or behavior problems. In addition, we found specific effects of each type of early life stress. Children exposed only to early maternal depression showed more cortisol activity when symptom severity was high and less when symptoms were low; they also showed the biggest changes in cortisol activity when symptoms increased or decreased. In contrast, children exposed only to family expressed anger showed the opposite pattern, with lower cortisol activity when symptom severity was high and greater cortisol activity when symptom severity was low. These findings will help guide research aimed at developing effective ways to help families support healthy development in children.

Sources:


What Predicts Early Sexual Activity in Adolescents?

Sexual behavior during adolescence has been an extremely important issue in the United States in recent years, especially given that adolescents engaging in sexual behaviors at or before age 15 are more likely to take risks, such as having sex without protection or having more than one sexual partner. These early, risky sexual behaviors can lead to negative outcomes such as teen pregnancy and sexually transmitted infections. Therefore, with prevention in mind, we set out to determine what factors lead to the onset of sexual behavior at or before age 15 among teens in the Wisconsin Study of Families and Work.

In a study published in 2009, and featured in USA Today, we hypothesized that early sexual behavior results from a build-up of individual, family, and sociocultural risk factors, rather than from one specific factor. This idea suggests that the more risk factors an individual is exposed to, the more likely she or he is to engage in this behavior.

When taking into account both oral sex and sexual intercourse (many teens today engage in oral sex before first intercourse), the findings supported the idea of a build-up of risk factors resulting in the initiation of early sexual behavior, which we defined as engaging in sex at or before age 15. For girls, these factors included more time spent watching TV, having poor relationships with parents, living in a fractured household, having symptoms of ADHD (attention-deficit hyperactivity disorder), low academic achievement, and having parents with lower levels of education. For boys, these risk factors included more advanced pubertal development, more time spent watching TV, symptoms of ADHD and ODD (oppositional defiant disorder), and poor relationships with both parents.

We found that low self-esteem was related to early sexual behavior in both boys and girls. In contrast to studies with other samples, some factors, such as sports participation and depression, were not related to early sexual debut for girls or boys.

These results have important implications for prevention programs. The WSFW findings suggest that programs aimed at reducing the likelihood of early sexual behavior need to address multiple identified risk factors, not just a single one. Also, these findings suggest that parents, as well as teachers and counselors, should take part in implementing prevention programs. More programs such as these could bring about a decrease in early, risky sexual behavior in adolescence.


Another WSFW article on this topic that you might find interesting:
Thank you again for your loyalty to WSFW and your continued support of the study. If you would like more information on our research and links to other publications, please visit http://www.wsfw.us.