Depression Symptom Trajectories across Adolescence and Emerging Adulthood: Associated Risk and Protective Factors

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REACH Lab

The Lab's primary research interest is in the area of depression among adolescents and emerging adults.

Our program of research focuses on several areas:

(a) the risk and protective factors in the development of depression and emotional regulation in adolescence,
(b) school-based mental health prevention and strength-based programs (school engagement), and
(c) community-based programs (mentoring) that address the mental health and educational needs of diverse populations.

• Aboriginal youth
Learning Objectives

1. Describe pathways of **depressive symptoms** across adolescence and emerging adulthood.
2. Share a **developmental model** of depression useful for clinical formulation and developmental research.
3. Describe the constructs of **risk and protective factors**.
4. Share advantages of **Growth Curve Modeling** with national datasets.
5. Show how risk and protective factors **interact with age and gender** over time.
6. Discuss **limitations and implications** for clinical practice, research, and government policy.
7. Preview **future research**.
Adolescent Depression

- Depression among adolescents and emerging adults is a common mental health issue
  - Emerging Adulthood (EA): ages 18 – 29 (Arnett, 2007)

- It is important to study depression in adolescence, as it emerges during this time period (Hankin et al., 1998; Kessler et al., 2001), and often continues into EA (Lewinsohn et al., 2003; Rudolph, 2009)
  - Six-fold increase in depression from early (age 15, 3%) to late adolescence (age 18, 15%)

- Past research has primarily focused on risk and vulnerability factors of depression (Lerner et al., 2005)
Mean Depressive Symptom Scores Among American Youth, ages 12-29 years

(Rawana & Gentile, in preparation)
Mean Depressive Symptom Scores Among Canadian Youth, ages 12-23 years

(Rawana & Morgan, 2013; JN of Youth and Adolescence)
Developmental Systems Theory
Developmental Systems Approach to Adolescent Depression

Figure 1. Developmental influences on the emergence of depression across childhood and adolescence. Theoretical developmental model of depression in childhood and adolescence that describes the fundamental risk and protective factors associated with depression and emphasizes the role of eating- and weight-related disturbances (EWRDs) Adapted from Rawana et al. (2010).
Risk and Protective Factors

- **Risk factors**: increase the individuals probability of developing depressive symptoms
  - E.g., Eating- and weight-related disturbances (EWRDs; Rawana, 2013; Rawana et al., 2010), emotion dysregulation/coping styles, etc.

- **Protective factors**: promote well-being of all individuals, regardless of life circumstances; confer against risk factors
  - E.g., social support variables (parental closeness, friendships); physical activity, self-esteem, optimism, religiosity etc.
Our Developmental Trajectory Research Objectives

1. Investigate the developmental trajectories of depressive symptoms throughout adolescence and emerging adulthood (ages 12 – 29) in national, normative samples
   - Canadian, Canadian-Aboriginal, Canadian immigrant, and American samples

2. Examine potential risk and protective predictors that influence depressive symptom levels in early adolescence (baseline), and over time

3. Examine the influence of sex on predictors in early adolescence and over time
Lab Studies

Familial Level Subsystem

Individual Level Subsystem
- Eating and Weight Related Disturbances
- Emotion Regulation / Avoidant Coping
- Self-Esteem and Optimism
- Suicide Ideation and Attempts
- Physical Activity
- Impulsive Decision Making
- Substance Use
- Religiosity & Attendance, Volunteerism
- Sex and Ethnicity

Perceived closeness to mother

Perceived closeness to father
Canadian Dataset: NLSCY

- **Secondary data set:**
  - Statistics Canada’s National Longitudinal Survey of Children and Youth (NLSCY) follows Canadian youth, including Aboriginal peoples and immigrant youth (Nguyen, Rawana, & Flora, 2010)
  - Access through SSHRC Research Data Centre

- **8 Cycles of data collection**
  - Every 2 years

- Approximately 12,000 respondents with data from Cycle 1 to Cycle 8
NLSCY Subset: Aboriginal Youth

- In Canada, Aboriginal peoples refers to First Nations, Inuit, and Metis
  - Approx. 1 million, majority under age 30; Statistics Canada 2008
- Many Aboriginal youth experience disportionate mental health issues, including substance misuse and depression (Beauvais et al., 2004; Lehti et al., 2009) related to historical injustices and traumas (colonization, assimilation)
- Approximately 300 respondents (off-reserve) with data from Cycle 1 to Cycle 8
American Dataset: Add Health

- Secondary data set:
  - National Longitudinal Study of Adolescent Health (Add Health) longitudinally follows American youth
  - Open and restricted access datasets

- 4 waves of data
  - Years of data collection

- Approximately 20,000 respondents cross-sectionally, about 1,800 in age-based datasets
Growth Curve Modelling (aka MLM) (Singer and Willet, 2003)

- Longitudinal analysis of symptom trajectories
  - Influence of both risk and protective factors
- Allows you to examine two aspects of a trajectory:
  1. Intercept: Baseline (e.g., at age 12)
  2. Slope: Changes over time (e.g., from age 12-29)
Mean Depressive Symptom Scores Among American Youth, age 12-29 years
Prototypical Trajectory of Depressive Symptom Scores Among American Youth, age 12-29 years

On average, depressive symptoms increase after age 12, decrease after mid-adolescence, and increase again at mid-emerging adulthood.
Prototypical Depressive Symptom Trajectory Among Canadian Youth, age 12-21 years

(Rawana & Morgan, 2013)

On average, depressive symptoms decrease slightly at ages 12 through 14, increase from ages 14 through 17, and then decrease through age 21.
Prototypical Depressive Symptom Trajectories among Canadian Youth, by Sex
Depressive Symptom Trajectories Among Canadian Aboriginal Youth, by Sex

(Ames, Rawana, Gentile, & Morgan, 2013; JN of Youth and Adolescence)
Risk Factors

- Eating- and weight-related disturbances (EWRDs)
  - Negative cognitions and behaviours related to one’s physical appearance and eating habits (e.g., dissatisfaction with weight; body) that may precede the emergence of depressive symptoms (Rawana et al., 2010; Stice et al., 2000)
  - Previous research in this area has been carried out using relatively small clinical and community samples (Rierdan et al., 1989; Santos et al., 2007; Stice & Bearman, 2001; Stice et al., 2000)

- Self-esteem
  - Well-established vulnerability factor for depression among adolescent girls and boys (MacPhee and Andrews 2006)
  - May interact with gender (Ferreiro et al. 2012)
Risk Factors

- **Suicide Ideation and Attempts**
  - Few studies investigate suicide-related predictors of depression; preliminary evidence that suicidality influences later depressive symptoms (MacDonald, Taylor, & Clarke, 2009)
  - Most studies on suicide-related predictors combine suicide ideation and attempts into one measure

- **Avoidant Coping & Impulsive Decision Making**
  - Research indicate relationship between avoidance and impulsivity and depression (e.g., Connor-Smith & Compas, 2002; Cyders & Smith, 2008; Holahan, et al., 2005), however, few studies have investigated the relationship across adolescence and EA
Protective Factors

- **Perceived Closeness to Parents**
  - Relationship with depressive symptoms in EA is unclear as studies focus on adolescence (Branje et al., 2010)
  - Few studies investigate the difference between mother and father closeness (Sheeber, Hops, & Davis, 2001)

- **Religiosity**
  - Few studies investigate religiosity among youth (Nooney, 2005)
  - Mixed findings; examine separate constructs of religiosity (Rasic, Kisely, & Langille, 2011)
Protective Factors

- **Optimism**
  - Optimists attribute negative life events to external, temporary, or specific contexts, and adopt positive and healthy lifestyles (Carver, Scheier, & Segerstrom, 2010; Hernández & Carrillo, 2010; Patton et al., 2011)

- **Physical Activity**
  - Physical activity has been linked to improved mood among youth (Birkeland, et al., 2009; Jerstad, et al., 2010; McPhie & Rawana, 2012)
  - Unclear how factors influence depression across adolescence and early adulthood
Outcome Variable

- Depressive symptoms
  - Add Health: 9-item short version of the Centre for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977; Primack, et al., 2009)
  - NLSCY: 12-item CES-D (Poulin, Hand, & Boudreau, 2005)
  - How many times they had experienced each item in the past 7 days
  - Responses range from 0 (never or rarely) to 3 (most of the time or all of the time)
Risk: Suicide Attempts

- Suicide attempters had higher depressive symptoms in early-adolescence and in late emerging adulthood
Risk: Avoidant Coping

- High avoidance is a more salient risk factor for adolescent boys than girls, and for women than men in EA.
Risk: Self-Esteem and Weight Management Effort (*in fact, protective!*) in Early Adolescence; Self-Esteem Overtime
Protective: Self-Esteem in Early Adolescence

Canadian Aboriginal Youth
Protective: Perceived Closeness to Mother

- Protective effects of high perceived closeness to mother is most salient during early adolescence; however, relationship continues to remain protective in late emerging adulthood.
High perceived closeness to father is most salient for adolescent boys, and then becomes equally protective for both sexes over time.
Protective: Engagement in Physical Activity in Early Adolescence and Overtime

[Graph showing the relationship between age in years and depression score, with two lines representing high and low engagement in physical activity.]
Protective: Optimism in Early Adolescence

High levels of optimism
Low levels of optimism

Depression Score
Age in years

Canadian Aboriginal Youth
Summary: Depressive Symptoms Pathways Among Youth

- Depressive symptoms trajectory:
  - Generally, increase in symptoms in early-to-mid adolescence, decrease through early emerging adulthood, and increase from mid-to-late emerging adulthood
  - Girls reported greater depressive symptoms than boys, but sex difference narrows in emerging adulthood
  - Aboriginal girls not only have higher levels of depression at age 12, but these levels remain elevated across adolescence and into emerging adulthood when compared to males
Summary of Risk/Protective Factors for Early-Adolescents

- In early adolescence, risk factors for depression include suicidal ideation, impulsive decision making, and avoidant coping.

- In early adolescence, protective factors for depression include weight management effort, perceived closeness to parents (early adolescent boys & fathers, early adolescents with mothers), and religious attendance.

- Optimism (Aboriginal youth)
Summary of Risk/Protective Factors for Adolescent Depression Pathways

- Across adolescence and emerging adulthood, risk factors include *suicidal attempts* (early adolescence & late-EA), *avoidant coping* (adolescence, boys; EA, girls)
  - Emotion dysregulation?

- Across adolescence and emerging adulthood, protective factors include *physical activity*, *perceived closeness to parents* (narrowing of sex differences), and *self-esteem*
  - Broader individual and familial factors?

- Note. Non-significant findings: BMI, body dissatisfaction
Strengths and Limitation of Research

- **Strengths:**
  - Use of large, nationally representative samples; use weighted scores to infer population-based findings
  - Training in growth curve modeling to examine broad developmental pathways of mental health issues
  - Inclusion of multiple risk and protective factors
  - Investigation of sex interactions with each predictor

- **Limitations:**
  - Use of normative sample vs. clinical (i.e., ~10% of individuals reporting severe levels of depressive symptoms)
  - Use of single-item measures of predictors
  - Use of single normative vs. group-based trajectories
Research Implications

- **Clinical:**
  - Importance of a developmental systems framework to understand ongoing risk and protective factors in adolescence and emerging adulthood
    - Second peak of depressive symptoms in late emerging adulthood (post-secondary students transitioning to employment)
  - Early-identification of vulnerable individuals (e.g., early-adolescents)
  - Inclusion and promotion of identified protective factors in prevention and intervention programs
  - Culturally-competent assessment of risk and protective factors
  - Provides support for a strengths-based approach to addressing the mental health needs among adolescents and emerging adults
Research Implications

- **Research:**
  - Our studies replicate sex differences in depression across adolescence and *emerging adulthood* (growing area of research).
  - Inclusion of multiple predictors in each study contribute both to our understanding of adolescent depression in general, as well as to the specific research literature of each predictor (e.g., suicidality research, emotion regulation literature, etc.).
  - Expand knowledge on unique and common protective factors across cultural groups.
  - Contribute to evidence of positive psychology or strengths-based approaches that improve mental health and, in the future, educational success of young people.
Healthy Youth Development Policy

Policy initiatives promoting youth well-being should incorporate strategies to improve self-esteem, healthy relationships, physical activity, particularly among individuals transitioning to adolescence and adulthood, particularly females (vulnerable to depression)

- Youth Policy Framework (YPF), *Stepping Stones, 2012*
  - Goal is to mobilize within the child and youth education and service section and academic community in order to build a shared understanding of youth development
  - Inform evidence-based resources and initiatives that can be used to better understand developmental needs of youth and the opportunities needed to ensure their success
Ontario Youth Policy Framework

- **Policy Principles:** Youth Policy Framework (YPF), *Stepping Stones, 2012*
  - Safety needs, health and development, engagement and leadership, access to support and services, community responsibility, equity, and partnerships
  - Strengthen the alignment of youth services across governments, provincial ministries, and community agencies, and addresses the broad developmental needs of youth

- Special section on The Ontario Youth Policy Framework: *Facilitating a Common Understanding of Youth Development to Guide Policy and Program Development*
  - Co-Edited by Dr. Jennine Rawana & Dr. Jennifer Connolly, Canadian Journal of Community Mental Health (2013)
  - Describe process of creating YPF (youth engagement); synthesize research findings from contributors across Canada
Next Steps on Developmental Pathways of Adolescent Depression

- Group-based trajectories of depressive symptoms among young people!
  - Overcome limitation of single normative curves and provide a more detailed analysis of groups of youth moving through adolescence and emerging adulthood
  - Explore unique experience of adolescent depression among vulnerable (e.g., transitioning) and less studied groups (e.g., boys)
  - More detailed measures of risk/protective factors, such as comprehensive measures of male-focused EWRDs (e.g., drive for muscularity) to further explore the EWRD-depression relation
Group-Based Depression Trajectories Among American Youth

(Rawana, Nguyen, Norwood, McPhie, Gentile, McDonald)
Thank you!

Questions and Comments

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Research on Emerging Adults and Adolescents
Measures Cont.

- **Avoidant Coping** (Kort-Butler, 2009)
  - Single item; responses ranged from 5 (agreed) to 1 (disagreed) for the following statement:
    
    “You usually go out of your way to avoid having to dealing with problems in your life”

- **Impulsive Decision Making** (Miller, Barnes, & Beaver, 2011; Paternoster & Pogarsky, 2009)
  - Single item; responses ranged from 5 (agreed) to 1 (disagreed) for the following statement:
    
    “When making decisions, you usually go with your gut feeling without thinking too much about the consequences of each alternative”
Measures Cont.

- **Suicide Ideation**
  - Dichotomous item; asked whether in the past 12 months they had ever seriously thought about committing suicide
  - 0 (no) and 1 (yes)

- **Suicide Attempts**
  - How many times they actually attempted suicide in the past 12 months
  - Recoded into dichotomous item:
    - 0 (zero times), 1 (one or more times)
Measures Cont.

- **Religious Importance**
  - Asked how important their religion was to them
  - Ranged from 1 (*not important at all*) to 4 (*very important*)

- **Religious Attendance**
  - Asked how many times they attended religious services within the past 12 months
  - Ranged from 1 (*never*), to 4 (*once a week*)
Measures Cont.

- **Perceived Closeness with Parents**
  - Respondents asked separately how close they feel to their mother and father figure.
  - Response options ranged from 1 (not close at all) to 5 (extremely close).

- **Self-esteem**
  - Item subset from the General-Self Scale of the Marsh Self-Description Questionnaire (SDQ; Marsh & Gouvernet, 1989).
  - Sample items: “In general, I like the way I am,” and “A lot of things about me are good.”
Measures Cont.

- **Optimism**
  - Two items: “I feel optimistic about the future” and “The next 5 years look good to me”
  - Range from 1 (strongly disagree) to 4 (strongly agree)

- **Engagement in Physical Activity**
  - Modified version of a physical activity scale (Ford, Nonnemaker, & Wirth, 2008)
  - Indicate participation in physical activities during the past 7 days,
  - Range from 0 (not at all) to 7 (7 or more times)
Measures Cont.

- **Body Dissatisfaction**
  - One item was an indicator of body dissatisfaction across all cycles (i.e., “I like the way I look.”) and was reverse coded to align with body dissatisfaction.
  - This item was used as a time-varying predictor in the model.

- **BMI**
  - Self-reported height and weight (kg/m²)
Measures Cont.

- **Weight Management Effort**
  - Dichotomous item:
  - 0 (not engaging in weight management effort; included only those who said that they were not actively trying to do anything about their weight) or
  - 1 (engaging in weight management effort which included the categories “trying to lose weight, trying to gain weight, or trying to stay the same weight)
  - Lowry and colleagues (2000) conceptualized “trying to stay the same weight” as an active attempt at managing weight
Measures:
Outcome variables

• Alcohol use behaviours based on the Health Behaviors in School Children (HBSC) Survey

1. Frequency of alcohol use
   • Single item about how often they drank in past 12 months
   • Response options: 1 (does not drink alcohol) to 5 (more than 1-2 days a week)

2. Frequency of heavy drinking
   • Single item about number of times get drunk or had more than five drinks within the past 12 months
   • Same response options as above
Results: Substance USE trajectories

Figure 1. Observed means of the frequency of alcohol use and frequency of heavy drinking outcome variables across adolescence and into emerging adulthood.
Figure 2. Increased optimism ($\gamma_{08} = -0.102$, $p = 0.0008$) predicted less frequency of alcohol use at age 12.
Substance USE trajectories

Figure 3. Increased optimism ($\gamma_{07} = -0.114$, $p = 0.0264$) predicted less intense heavy drinking behaviors at age 12.
Figure 4. Participation in weekly leisure activities ($\gamma_{23} = -0.184$, $p = 0.0226$) predicted less frequency of alcohol use over time.
Figure 5. Participation in weekly leisure activities ($\gamma_{02} = -.265, p = .0355$) predicted less intense heavy drinking behaviors at age 12.
Figure 6. Participation in religious activities ($\gamma_{04} = -0.105, p = 0.005$) predicted less intense heavy drinking behaviors at age 12.
Substance USE trajectories Summary

- Among off-reserve Aboriginal youth, increased sense of optimism and participation in weekly leisure activities in early adolescence were associated with less frequent alcohol use and heavy drinking.
- Participation in weekly leisure activities was associated with less frequent heavy drinking in early adolescence, and less frequent alcohol use across development.
- Participation in weekly religious activities was associated with less frequent heavy drinking in early adolescence.
- Contrary to expected, self-esteem was not protective against alcohol use behaviours.