**Flow Chart for Articles You Read**

**Provide the full reference for the article:**

Olson, J.R. & Goddard, H.W. (2012) Applying prevention and positive youth development theory to predict depressive symptoms among young people. *Youth & Society* 47(2), 222-244.

I also consulted an article referenced by Olson & Goddard that explained in detail how the questionnaire was created in order to understand what each variable measures and to know the level of measurement for each.

Arthur, M.W., Hawkins, J.D., Pollard, J.A., Catalano, R.F. & Baglioni Jr., A.J. (2002) Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors. *Evaluation Review* 26(6), 575-601.

**Your Name(s):** Swisher, Mickie

**BOX 1: Research Questions & Objectives**

A. **Question**

A1. To what degree do the key factors in two theoretical models that are commonly used in youth programs affect risk and protective factors for depression among young people.

B. **Topic:**

B1. Identify factors that can reduce or mitigate depression among youth

C. **Explanation**

C1. Do the family risk factors (like poor discipline and family conflict that consistently show a positive relationship with undesirable outcomes such as high-risk behaviors (externalized outcomes) by adolescents also result in development of depressive symptoms (internalized outcomes)?

C2. To what degree does social support by family, school and community ***buffer or reduce*** (moderate) the effects of family risk factors on the development of depressive symptoms (internalized outcome) among adolescents?

C3. Do these protective factors also have a **direct effect** on reducing depressive symptoms for adolescents – e.g., do they function as promotive rather than protective factors?

D. **Theory:**

D1. Which of the two theories that predominate in research and practice to reduce risk behaviors for youth and increase positive developmental outcomes is most effective?

E. **What research design did the author use?**

This is a single group cross-sectional design with no time component (not repeated over time, administered only once)

| | | | | |
|---|---|---|---|---|
| True experiment | Quasi-experiment | Longitudinal | **Cross-sectional** | Case study |

**BOX 2: Theoretical Constructs & Linkages Explored in the Research**

**A. *IF* the author uses a theoretical framework, state the constructs (concepts) in the theory that are**

**used in the study. Indicate which linkages between these constructs are explored in the research.**

**Constructs:**
Risk factors
Protective factors
Depressive symptoms

**Linkages Examined:**
Relationships between risk factors and development of depressive symptoms
Direct and buffering relationships between protective factors and development of depressive symptoms

**B. Does the author state research or what are sometimes called general or working hypotheses?** These are ***NOT statistical hypotheses.***

B1. Each risk factor has an independent and additive effect on the development of depressive symptoms in youth.

B2. Protective factors will buffer the effect of risk factors on depressive symptoms

B3. Protective factors may have a direct effect on reducing development of depressive symptoms

**C. Interventions or Treatments.**

none

**BOX 3: Variables & Level of Measurement**

**NOTE Give the level of measurement for EACH variable as you respond to the questions in B and C below.** There are four levels of measurement, nominal, ordinal, interval and ratio. For all practical purposes in our work, interval and ratio data are equivalent levels of measurement. Most narrative data (like answers to questions in a focus group) are nominal, but such data may be transformed into other levels of measurement (by counting how many people used the term "terrible" to describe an event, for example).

**A. List the comparison groups. For *EACH GROUP*, (1) explain how the author defined the group. (2) indicate if the groups are "pre-existing" or "natural" groups (e.g., men versus women or different youth organizations), and (3) IF the research made decisions about how to assign the units under study to groups, explain the procedure use to assign them.**

None

**B. List and define in your own words the dependent or outcome variables.**

**Depression (construct)**

**Outcome Variables**
1. Depressive symptoms – four items used to produce a composite variable score. Original score for each item is ordinal, but the combined score is interval

**C. List and define in your own words the independent or predictor variables (NOT the same as the comparison groups).**

**Protective factors (construct) Variables**
1. Community opportunities for prosocial behavior– two items used to produce a composite variable score, interval data
2. Community rewards for prosocial behavior – three items used to produce a composite variable score, interval data
3. School opportunities for prosocial behavior– five items used to produce a composite variable score, interval

data
4. School rewards for prosocial behavior – four items used to produce a composite variable score, interval data

**Risk factors (construct) Variables**
1. Poor family supervision – five items used to produce a composite variable score, interval data
2. Poor family discipline – three items used to produce a composite variable score, interval data
3. Family conflict – three items used to produce a composite variable score, interval data
4. Family history of antisocial behavior – seven items used to produce a composite variable score, interval data

**BOX 4: Sampling**

**Do NOT attempt to complete this box without the document "Basics of Sampling" at hand. It will be harder and will take much longer than needed without the guide. Don't waste your time. Use the guide.**

**A. List and define the theoretical population(s).**

All adolescents between 6th and 12th grade living in Pennsylvania in 2005. By implication, the theoretical population would probably consist of all adolescents in this age group living in the U.S. since there is no reason to think that adolescents in Pennsylvania differ from those in the nation as a whole *with regard to traits and characteristics that could affect the outcomes of the study.* However, the authors themselves do not make this claim.

**B. What is the accessible population(s)?**

Middle and high school students in public schools in Pennsylvania

**C. Is there a sampling frame? If so describe it (them).**

Middle and high school students enrolled in a public school in Pennsylvania in 2005.

**D. What is the size of the sample and how was sample size determined?** If there are comparison groups, give this information for each group.

There are two versions of the Pennsylvania Youth Survey. One version has questions about the adolescent's family and the other version does not have these questions. A school administrator decides which version to use. This study used only the participants who received the version *with questions about the family.*

The final sample was 43,493

**E. What are the selection or screening criteria beyond the traits inherent in the definition of the theoretical and accessible populations?**

Three screening criteria were used.

(1) If students said they had taken a drug called "derbisol," the data they provided were discarded because derbisol does not exist. This was a "false response" control question.

(2) If student said they engaged in antisocial behaviors or used alcohol, tobacco or other drugs in levels so high that they are not "believable," the data were discarded.

(3) Students who provided inconsistent answers to related questions were eliminated – for example, saying they drank alcohol within the last 30 days, but also saying they had no lifetime history of drinking alcohol.

**F. Name the specific sampling approach used (e.g., systematic random sample, volunteer sample, etc.). If a purposive sample was taken, name the specific type of purposive sample – e.g., maximum variation purposive sample.**

This is a census of all students in the sampling frame.

**G. What was the response rate?**

Does not give this information. The most useful would be to know how many cases were discarded because of the screening criteria, but the authors do not state this.

**H. Were replacement procedures used?**

Not needed or possible – they are using archival data

**BOX 5: Data Collection Procedures**

**Explain very briefly how the data were collected.**

Questionnaire administered in person at each school, but the authors did not collect the data themselves. They used archival data collected by the school administration.

**BOX 6: Statistical Data Analysis**
**Complete ONLY if the article uses statistical tests.**
**Descriptive statistics of the sample are NOT statistical data analysis.**

| A. **Make a NUMBERED LIST of the statistical hypotheses.** Statistical tests ***always test some hypothesis,*** but the authors may not state all hypotheses clearly in the text. They assume that you will understand the implicit hypotheses. If an article uses any statistical tests, you ***must state the underlying statistical hypothesis, even if the authors do not.*** For example, if the author uses a t-test to compare two groups, even if s/he does not say it, the underlying hypothesis is that the two groups differ with regard to the variable used in the test. State the statistical hypotheses ***in your own words***. There may be **many hypotheses.** I suggest you list one hypothesis per row below and add rows as needed. | **Specific statistical test(s) used to test each hypothesis.** | **Results of the test (e.g. significant at 0=0.05, etc.)** |
|---|---|---|
| **Preliminary Test for relationships between risk factors (predictor variables) and depressive symptoms (outcome variable)** | Bivariate correlations | p<0.001 |
| **H1A:** Poor family supervision X depressive symptoms | .272 | Sig |
| **H1B:** Poor family discipline X depressive symptoms | .199 | Sig |
| **H1C:** Family conflict X depressive symptoms | .420 | Sig |
| **H1D:** Family history X depressive symptoms | .322 | Sig |
| **Preliminary test for relationships between *protective* factors (predictor) and depressive symptoms (outcome)** | | |
| **H2A:** Community opportunities for prosocial behavior X depressive symptoms | -0.156 | Sig |
| **H2B:** Community rewards for prosocial behavior X depressive symptoms | -0.229 | Sig |
| **H2C:** School opportunities for prosocial behavior X depressive symptoms | -0.222 | Sig |
| **H2D:** School rewards for prosocial behavior X depressive symptoms | -0.260 | Sig |
| **Relationships among *predictor* factors** | Bivariate correlations | p<0.001 |
| **H3A: Risk factors** will co-vary **positively** | | |
| Poor family supervision X poor family discipline | 0.659 | Sig |
| Poor family supervision X family conflict | 0.262 | Sig |
| Poor family supervision X family history | 0.370 | Sig |
| Poor family discipline X family conflict | 0.211 | Sig |
| Poor family discipline X family history | 0.391 | Sig |
| Family conflict X family history | 0.345 | Sig |

| | | |
|---|---|---|
| **H3B: Protective factors** will co-vary **positively** | | |
| Community opportunities X community rewards | 0.324 | Sig |
| Community opportunities X school opportunities | 0.250 | Sig |
| Community opportunities X school rewards | 0.200 | Sig |
| Community rewards X school opportunities | 0.329 | Sig |
| Community rewards X school rewards | 0.393 | Sig |
| School Opportunities X school rewards | 0.586 | Sig |
| | | |
| **H3C: Risk** and **protective** factors will co-vary **negatively** | | |
| Poor family supervision X community opportunities | -0.241 | Sig |
| Poor family supervision X community rewards | -0.384 | Sig |
| Poor family supervision X school opportunities | -0.332 | Sig |
| Poor family supervision X school rewards | -0.352 | Sig |
| Poor family discipline X community opportunities | -0.185 | Sig |
| Poor family discipline X community rewards | -0.329 | Sig |
| Poor family discipline X school opportunities | -0.275 | Sig |
| Poor family discipline X school rewards | -0.316 | Sig |
| Family conflict X community opportunities | -0.107 | Sig |
| Family conflict X community rewards | -0.224 | Sig |
| Family conflict X school opportunities | -0.158 | Sig |
| Family conflict X school rewards | -0.209 | Sig |
| Family history X community opportunities | -0.131 | Sig |
| Family history X community rewards | -0.260 | Sig |
| Family history X school opportunities | -9.203 | Sig |
| Family history X school rewards | -0.266 | Sig |
| **Tests of the direct (*mediator*) effects of non-theoretical, independent variables of age and sex on development of depressive symptoms (reported in Adjusted Beta Score)** | Hierarchical Regression | Significance at p<0.01 |
| **H4:** Age will have a direct, independent effect on development of depressive symptoms | 0.089 | Sig |
| **H5:** Sex will have a direct, independent effect on development of depressive symptoms – **female = 0, male = 1** | -1.67 | Sig |
| **Tests of the strength of direct (*moderator*) effects of *risk factors on* development of depressive symptoms** | Hierarchical Regression | Significance at p<0.01 |
| **H6A:** Poor family supervision **increases** depressive symptoms | 0.097 | Sig |
| **H6B:** Poor family discipline **increases** depressive symptoms | -0.007 | Not Sig |
| **H6C:** Family conflict will **increases** depressive symptoms | 0.306 | Sig |
| **H6D:** Family history will **increases** depressive symptoms | 0.152 | Sig |
| **Tests of the strength of direct (*moderator*) effects of *protective factors on* development of depressive symptoms** | Hierarchical Regression | Significance at p<0.01 |
| **H7A:** Community opportunities for prosocial behavior **decrease** depressive symptoms | -0.042 | Sig |
| **H7B:** Community rewards for prosocial behavior **decrease** depressive symptoms | -0.036 | Sig |
| **H7C:** School opportunities for prosocial behavior **decrease** depressive symptoms | -0.057 | Sig |
| **H7D:** School rewards for prosocial behavior **decrease** depressive symptoms | -0.096 | Sig |
| **Tests of the strength of interactions between protective and risk factors on development of depressive symptoms** | Hierarchical Regression | Significance at p<0.01 |
| **Community protective factors *buffer* effects of risk factors** | | |
| **H8A:** Community **opportunities for prosocial behavior decreases** the | 0.025 | Sig |

| | | |
|---|---|---|
| strength of the relationship between **poor family supervision** and development of **depressive symptoms** | 0.025 | Sig |
| **H8B:** Community **opportunities for prosocial behavior decreases** the strength of the relationship between **poor family discipline** and development of **depressive symptoms** | 0.020 | Sig |
| **H8C:** Community **opportunities for prosocial behavior decreases** the strength of the relationship between **family conflict** and development of **depressive symptoms** | -0.008 | Not Sig |
| **H8D:** Community **opportunities for prosocial behavior decreases** the strength of the relationship between **family history of antisocial behavior** and development of **depressive symptoms** | -0.008 | Not Sig |
| **H9A:** Community **rewards for prosocial behavior decreases** the strength of the relationship between **poor family supervision** and development of **depressive symptoms** | 0.000 | Not Sig |
| **H9B:** Community **rewards for prosocial behavior decreases** the strength of the relationship between **poor family discipline** and development of **depressive symptoms** | 0.017 | Sig |
| **H9C:** Community **rewards for prosocial behavior** will **decreases** the strength of the relationship between **family conflict** and development of **depressive symptoms** | -0.007 | Not Sig |
| **H9D:** Community **rewards for prosocial behavior** will **decreases** the strength of the relationship between **family history of antisocial behavior** and development of **depressive symptoms** | 0.002 | Not Sig |
| **Tests of the strength of interactions between protective and risk factors on development of depressive symptoms** | | |
| **School protective factors *buffer* effects of risk factors** | | |
| **H10A:** School **opportunities for prosocial behavio**r **decreases** the strength of the relationship between **poor family supervision** and development of **depressive symptoms** | 0.005 | Not Sig |
| **H10B:** School **opportunities for prosocial behavior decreases** the strength of the relationship between **poor family discipline** and development of **depressive symptoms** | 0.001 | Not Sig |
| **H10C:** School **opportunities for prosocial behavior decreases** the strength of the relationship between **family conflict** and development of **depressive symptoms** | -0.005 | Not Sig |
| **H10D: School opportunities for prosocial behavior decreases** the strength of the relationship between **family history of antisocial behavior** and development of **depressive symptoms** | -0.016 | Sig |
| **H11A:** School **rewards for prosocial behavior decreases** the strength of the relationship between **poor family supervision** and development of **depressive symptoms** | -0.11 | Not Sig |
| **H11B:** School **rewards for prosocial behavior decreases** the strength of the relationship between **poor family discipline** and development of **depressive symptoms** | 0.005 | Not Sig |
| **H11C:** School **rewards for prosocial behavior decreases** the strength of the relationship between **family conflict** and development of **depressive symptoms** | -0.019 | Sig |
| **H11D:** School **rewards for prosocial behavior** reduces the strength of the relationship between **family history of antisocial behavior** and development of **depressive symptoms** | 0.010 | Not Sig |

B. **Describe any additional (unplanned, post-hoc) statistical analyses performed.**

It is hard to interpret the meaning of interaction effects in hierarchical regression models because they can vary

in strength or even in direction (positive or negative) depending on the direct relationships involved. Therefore, the authors plotted the effects of risk factors on depressive symptoms three times. In the first plot they assigned a value to each protective factor that is one standard deviation ***less*** than the actual mean in the data they collected. The second plot puts the value of each protective factor ***equal to*** the mean in their data. The third plot puts the value of each protective factor one standard deviation ***above*** the actual mean in their data. These plots are meaningful ***only for significant interaction effects, H8A, H8B, H9B, H10D, H11C*** in this study***.***

**Relationships of interactions between community protective factors and family risk factors**

**H8A: Community opportunities** for prosocial behavior decreases the strength of the relationship between **poor family supervision** and development of depressive symptoms. The authors predicted that the relationship between poor family supervision and depressive symptoms would be ***weakest when community opportunities are highest,*** e.g., that community opportunities buffer or reduce the effect of poor family supervision. The plot shows that the relationship between poor family supervision and depressive symptoms is ***weakest when community opportunities are lowest.*** This is the opposite of the authors' prediction.

**H8B: Community opportunities** for prosocial behavior reduces the strength of the relationship between **poor family discipline** and development of depressive symptoms. E.g., the authors hypothesize that the protective factor (community opportunities) ***buffers*** the risk factor (poor family discipline). This hypothesis was supported in the regression analysis, but the interaction effect is meaningless because poor family discipline had no direct effect on depressive symptoms. (**H6B:** Poor family discipline **increases** depressive symptoms). E.g., if there is no direct effect of poor family discipline, there cannot be a significant interaction, no matter what the statistical result.

**H9B: Community rewards** for prosocial behavior reduces the strength of the relationship between **poor family discipline** and development of depressive symptoms. The authors' hypothesize that community rewards ***buffers*** the risk factor of poor family discipline. As in the case of hypothesis H8B, the interaction effect is meaningless because poor family discipline is not a significant predictor of depressive symptoms.

**H10D: School opportunities** for prosocial behavior reduces the strength of the relationship between **family history of antisocial behavior** and development of depressive symptoms. The plot supports the author's hypothesis, but the slope of the plot lines are almost exactly the same for all three values (below the mean, at the mean, and above the mean) assigned to the protective factor (school opportunities for prosocial behavior). The slopes of these lines should not be the same for a small and large buffering effect. Therefore, this relationship probably has no real meaning.

**H11C: School rewards for prosocial behavior** reduces the strength of the relationship between **family conflict** and development of depressive symptoms. The slopes of the three lines (low, medium and high value for school rewards for prosocial behavior) do differ, but not much. The effect is probably "real," but not very meaningful and not as great as the authors anticipated.

C. **What were the key (most important) results of this study?**

1. Do the family risk factors (like poor discipline and family conflict that consistently show a positive relationship with undesirable outcomes such as high-risk behaviors (externalized outcomes) by adolescents also result in development of depressive symptoms (internalized outcomes)?

This study shows that three family risk factors – poor family supervision, family conflict, and family history -- have a direct effect on internalized outcomes for adolescents (Hypotheses H1A-H1). Surprising, however, poor family discipline had **no direct effect** on depressive symptoms, although the literature shows a well-established effect on externalized (behavioral) outcomes.

2. To what degree does social support by school and community ***buffer or reduce*** (moderate) the effects of family risk factors on the development of depressive symptoms (internalized outcome) among adolescents?

Only one of the social support factors, community rewards for prosocial behaviors, buffered the effect of only **one family risk factor**, family conflict. However, community **opportunities** for prosocial behavior actually strengthened the relationship between poor family supervision and depressive symptoms. Community rewards had essentially no buffering effect family risk factors except a slight buffering effect on the relationship between poor family supervision and depressive symptoms. School opportunities for prosocial behavior had a buffering effect on depressive symptoms as did school rewards for prosocial behavior – but these effects were very small even though significant. In general, the results show **no buffering effect for social support by school and community.**

3. Do school and community protective factors have a **direct effect** on reducing depressive symptoms for adolescents – e.g., do they function as promotive rather than protective factors?

School and community protective factors all had a significant direct effect on development of depressive symptoms. While small, the effects were consistent across all four factors included in the study.

**BOX 7: Qualitative Data Analysis**
**Complete ONLY if the article uses qualitative data analysis**

A. **Explain how the data were analyzed in your own words.**

B. **How were the results presented? (a table, a model/diagram, lengthy quotations, for example)**

C. **Were any procedures used to ensure rigor in data analysis and interpretation?**

D. **What were the key (most important) results of this study?** Make a bullet list. Focus on key results. State them in your own words. These are NOT a repetition of the results of specific statistical tests. They are the overall findings.

**BOX 8: Conclusions**

**This is NOT the same thing as results.** Results are specific to a study. Conclusions are the broader implications of the research. The conclusions typically directly address the author's stated research objectives. As you examine the conclusions, organize them by the three types of objectives you identified at the beginning of this form. Do **NOT** repeat any results here.

**Topical Objective(s).**

The study did suggest some very interesting conclusions that have implications for intervention programs. First, the study indicates that the family-level risk factors that are the object of many interventions have both external (behavioral) and internal (psychological) outcomes for adolescents. Programs using the risk prevention model could evaluate effects on internal outcomes because this may be an unrecognized benefit of the interventions. Similarly, the study suggests that programs relying on the PYD theoretical framework may also find internalized effects of their interventions because many of the "protective" factors included in the study are very similar to the "promotive" factors in PYD theory.

**Explanatory Objective(s).**

This study suggests that the protective factors in risk/prevention theory and the promotive factors in PYD programs **both** contribute to positive mental health outcomes for adolescents. E.g., the behavioral (external) outcomes emphasized in most interventions today and the psychological (internalized) outcomes are similar and respond to similar risk factors. If both protective and promotive factors play a role in creating positive behavioral outcomes, programs could focus on both reducing family risk factors ***and*** bolstering the direct positive effects of promotive factors like community and school opportunities and rewards for prosocial behavior by adolescents. The cumulative effects of the mutli-pronged approach should be greater than of

either approach alone.

**Theoretical Objective(s).**

The study also suggests that we have an inadequate theoretical framework for understanding the complex system of internal and external outcomes of risk for adolescents, particularly family risk factors. This study did ***not show*** that the mechanisms that have been very well-established as predictors of externalized outcomes also serve as good predictors of internalized outcomes. The two processes may differ in important ways. Both are critical in achieving positive outcomes for youth. In particular, while the risk factors seem to be the same for internal and external outcomes, the protective factors do not seem to be well identified for internalized outcomes. Further theoretical development is needed to create a model that incorporates both types of outcomes.