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The influences of perceived social support and personality on trajectories of subsequent depressive symptoms in Taiwanese youth

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ABSTRACT

Little is known about the combined effect of personality and social support on trajectories of depressive symptoms among youth. This study aims to investigate the influence of social support in different contexts on the development of depressive symptoms during adolescence and whether the association is moderated by adolescents' personality. The data using in this study is selected from the Taiwan Educational Panel Survey (TEPS), a longitudinal panel study since the year 2000 (at age 13) and three more waves (at ages 15, 17, and 18). A total of four waves of students' data (N = 4163) are analyzed using the latent growth models. The results indicate that the depressive symptom trajectory of Taiwan adolescents gradually grows in a quadratic curve. Social support in family context rather than school context was associated with depressive symptoms, while only a positive association is found between maternal support and depressive symptoms at the start. Meanwhile, increased extroversion personality is associated with the decreased initial level, increased linear changes, and decreased non-linear quadratic changes of adolescents' depressive symptoms. Further analyses show that a significant interaction between maternal support and extroversion personality is associated with increased non-linear quadratic growth curve of adolescents' depressive symptoms. In conclusion, adolescents' extroversion personality might moderate the effect of maternal support on developmental trajectory of depressive symptoms. Intervention that improves social support should take account for adolescent's personality, which may alter trajectory of psychological distress during adolescence.

1. Introduction

Depressive disorder is an important mental health problem in adolescents worldwide, affecting around 4–5% of adolescents globally (Thapar et al., 2012). Likewise, adolescent depression is a significant public health problem in Taiwan, with an estimated prevalence ranged from 12% to 18% for severe depressive and mild depressive symptoms (Lin et al., 2008; Wang et al., 2012). An increased risk of clinical depression typically emerges during adolescence and endures into adulthood (Kessler et al., 2001). Although adolescence is a period of vulnerability for depression, most adolescents do not become clinically depressed. The general trajectories of depressive symptoms increase in early and middle adolescence and then decrease through early adulthood (Hankin et al., 1998; Pettit et al., 2010). In addition, sub-threshold depressive symptoms in adolescence strongly predict an episode of major depression (Pine et al., 1999) and other health issues (Hasler et al., 2005) in adulthood. Under the circumstances, studying the factors affecting development of adolescents' depressive symptoms may help implement adequate preventive strategies to reduce further serious personal suffering and significant public health concerns.

The status of depressive symptoms varies over time during adolescence (Hankin et al., 1998; Parker and Roy, 2001; Pelkonen et al., 2002). Because depression occurs through different developmental pathway (Cicchetti and Toth, 1998), the developmental psychopathology perspective highlights the importance of examining trajectories of depression. Longitudinal research designs can delineate the dynamic changes as well as increasing, decreasing, or steady state trajectory of depressive symptoms from early to late adolescence. Meanwhile, longitudinal studies can capture both inter- and intra-individual change and the factors influencing the change over time. Distinct patterns of trajectories of adolescents' depression were found, with linear change rate (Furnham and

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Christoforou, 2007; Malecki and Demaray, 2002; Plenty et al., 2014; Stewart and Suldo, 2011) or non-linear change rate (Feng and Yi, 2012; Natsuaki et al., 2009; Yi et al., 2009).

Poor social support is a possible risk factor for adolescent depression (Needham, 2008). Adolescent perceptions of social support from family and school are associated with individual adjustment in adolescence (Bender and Losel, 1997; Burk and Laursen, 2005; Jessor et al., 1995; Needham, 2008). Social support is conceptualized as a multidimensional construct (Malecki and Demaray, 2002). The multidimensional construct includes different sources (e.g., family, school) or types (e.g., emotional, informational). Previous studies indicated that there are differential relations of social support from family and school contexts on adolescent psychopathology (Colarossi and Eccles, 2003; Plenty et al., 2014; Stewart and Suldo, 2011). However, the relative importance of different types of social support from family versus school context in explaining the developmental course of psychopathology over time remains unknown because these studies were cross-sectional in nature (Plenty et al., 2014; Stewart and Suldo, 2011).

To better understand the role of social support for the development of adolescents' depressive symptoms; it is important to consider that depression is also significantly influenced by individuals' personality characteristics (Del Barrio et al., 1997; Matsudaira and Kitamura, 2006). Extroversion is linked both empirically and theoretically with depressive phenomena (Clark et al., 1994). Extroversion personality is associated with increased positive emotion (Costa and McCrae, 1988) as well as decreased depressive symptoms (Del Barrio et al., 1997; Meyer, 2002). Extroverted persons are more involved with people and often experience more affection and enjoy greater social support (Furnham and Christoforou, 2007). Accordingly, it is proposed an interaction effect whereby a difficult personal trait amplifies the effect of a problematic relation in family or school context on depressive feelings (Brendgen et al., 2005).

The aims of this study are to utilize longitudinal panel data to investigate the long term impact of social support and personality on the developmental course of the depressive symptoms of Taiwanese youth over time from early adolescence (i.e. 12–13 years old or the first year of junior high school) to later adolescence (i.e. 18–19 years old or last year of senior high school). The following research hypotheses were addressed: 1) Social support from family as well as school context is associated with trajectories of depressive symptoms; 2) Extroversion personality is associated with trajectories of depressive symptoms; 3) There are interaction effects between social support from family as well as school context and personality on the development of depressive symptoms over time.

2. Method

2.1. Sample and data collection

The data used in this study were drawn from the Taiwan Education Panel Survey (TEPS) (Chang, 2011). The TEPS was jointly supported by Academia Sinica, the Ministry of Education, the National Academy for Educational Research, and the National Science Council in Taiwan. The study protocol was approved by the Ethical Committee of Taiwan Academia Sinica. The database was released 100% of data in 2011 for public use by the Center for Survey Research, Academia Sinica. All data were provided to researchers without identifying information.

The TEPS is a multistage, stratified sample survey of Taiwanese high school students according to geographical location, metropolitan/rural area, and public/private school. Probability proportional to the size of the primary sampling units was used in the TEPS. The source population of the TEPS consisted of students in all public and private schools, excluding schools with an enrollment of fewer than 10 students. Post-stratification weights were developed to adjust minority sampling to be consistent with the population.

TEPS was a longitudinal study that involved four rounds of data collection. The first round occurred in 2001 when the students were in the 7th grade (age = 13). Another 3 rounds of follow-up data were collected at the 9th (age = 15), the 11th (age = 17), and the 12th grades (age = 18), respectively. Participants included students, their parents, and their teachers. The data used in the present study were extracted from the four waves (i.e., 2001, 2003, 2007, and 2009) and included variables from the adolescent questionnaires. The data set included 20,055 adolescents in the base year (7th grade), with a response rate of 99%. Of these participants, 19,088 were followed in the second wave of follow-up. In Taiwan, two comprehensive entrance examinations take place in the middle school stage, where at the end of junior high (7th–9th grade) and senior high (10th–12th), respectively. Accordingly, most of participants who would be followed on the wave 3 (11th grade) were not at the same school while they were followed on the wave 1 and 2. Because of the high cost of following all participants, original researchers of the TEPS randomly sampled about four thousand participants as a core panel to complete the wave 3 and the wave 4 follow-up. The geographical location, metropolitan/rural area, and public/private school of the participants included in the core panel are consistent of those of the original study population. Finally, a total of 4261 and 4163 adolescents were followed on the wave 3 and the wave 4, respectively. The 4163 students were used in the subsequent analyses.

2.2. Measure

2.2.1. Adolescent depressive symptoms (wave 1 to wave 4)

In this study we used adolescent depressive symptoms as our main outcome. The depressive symptoms measure was developed by experts of adolescence studies in Taiwan (Wu et al., 2012), referencing items in the Center for Epidemiologic Studies Depression Scale (Radloff, 1991). Adolescents answer whether the following five statements fit with their depressive symptoms since the current semester: (1) Do not want to socialize with others; (2) Being depressed; (3) Feel like yelling, throwing objects, or fighting or hitting others; (4) Feel lonely; (5) Not sleeping well, can't fall asleep, easily awakening, and having nightmares. Participants were asked to respond to a 4-point Likert scale (ranging from 4 = 'oftentimes' through 1 = 'never'). Factor analysis showed one factor model fits the data adequately (RMSEA = 0.04, CFI = 0.99, TLI = 0.99, SRMR = 0.01). Five items are summed to create a depressive symptom score, with higher scores representing greater depression symptoms. The Cronbach alphas for this scale over the four waves range from 0.76 to 0.80.

2.2.2. Parental support (wave 1)

The parental support in this study examined maternal and paternal support perceived by adolescents separately. Wave 1 data was used to represent paternal support or maternal support perceived by adolescents during early adolescence (at the stage of junior high school). These items were (1) Does your mother listen to you discuss your thinking? (2) Does your mother talk to you with regard to pursue higher studies or obtain an employment? (3) Does your mother check your homework? In the same questionnaire, adolescents rated their paternal support, measured by the same 3 items used to measure paternal support (the word mother was replaced by father). All items were rated on a 4-point Likert-type scale (ranging from 4 = 'oftentimes' through 1 = 'never'). Factor analysis supported one factor model for paternal support and