

The Relationship between Adolescent Emotional Inhibition and Depression Disorder: The Moderate Effect of Gender

Jia-Ru Li, Chih-Hung Wang, and Ching-Wen Lin

Abstract—The association between emotional inhibition strategies linked to depression has been showed inconsistent among studies. Mild emotional inhibition maybe benefit for social interaction, especially for female among East Asian cultures. The present study aimed to examine whether the inhibition–depression relationship is dependent on level of emotion inhibition and gender context, given differing value of suppressing emotional displays. We hypothesized that the negative associations between inhibition and adolescent depression would not directly, in which affected by interaction between emotion inhibition and gender. To test this hypothesis, we asked 309 junior high school students which age range from 12 to 14 years old to report on their use of emotion inhibition and depression syndrome. A multiple regressions analysis revealed that significant interaction that gender as a moderator to the relationships between emotion inhibition and adolescent depression. The group with the highest level of depression was girls with high levels of emotion inhibition, whose depression score was higher than that of boys with high levels of emotion inhibition. The result highlights that the importance of context in understanding the inhibition–depression relationship.

Keywords—Emotional inhibition strategies, gender, adolescent depression.

I. INTRODUCTION

EMOTION regulation is defined as (refers to or is referred to) intrinsic and extrinsic regulation processes which are responsible for monitoring, evaluating and correcting emotion reactions, especially the kinds (the ones, the kinds) related to their context, density and duration [1]. Expressive suppression or inhibition refers to conscious inhibition or mask of one's own emotionally expressive behavior while it is emotionally aroused [2]. Some studies have demonstrated that using suppression is associated with negative emotions, disturbed interpersonal interactions, and depressed mood [3] [4] [5] [6]. However, it has been pointed out that some inconsistent outcomes of such finding emerged [7] [8] [9]. They also indicated that expressive suppression was associated with depression mood for European Americans, but not for Chinese participants.

II. CULTURE CONTEXT

From a cultural perspective, Eastern Asian peoples value harmony social relationships were used to define the self of

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each individual, which are different from Western cultures, which encourage free emotional expression [10] [11]. Furthermore, the fundamental motives behind behaviors of Eastern Asian are sought externally sources instead of internally sources [10]. That means individual decides how to act and judges their actions depends on other people's criteria rather than followed their inner own. Similarly, taking account another one's feeling was a superior principle beyond display one's emotions directly in Eastern Asian [12]. In other word, hiding real feelings in interpersonal relationship was regarded as polite and mature interpersonal behavior while exhibiting emotions directly was viewed as childish or rude behavior. Thus, mild degree of emotion inhibition may be beneficial to adaptation for adolescents of Eastern Asian.

III. GENDER

Gender is also a critical variable in understanding the relationship between emotion inhibition and depression disorder. Girls are reported have higher potential risk suffer from depression disorder, which almost twice times than males [13] [14], and this phenomena gradually begins from puberty [15]. Previous studies have examined various vulnerability factors to explain the emergence of the gender difference in depression [16] [17] [18]. However, the relationship between gender and depression disorder is still not comprehensively understand. In amount of research, girls were more inhibited their anger than boys [19], and girls could hide their disappointment better and displayed higher levels of social monitoring behaviors than boys [20]. Fathers which were observed during an emotionally arousing game paid more attention to girls' submissive emotion than to boys' while fathers concern more to boys' disharmonious emotion than to girls' at preschool age and early school age [21]. These results were inferred to reflect the influence of emotional socialization and social role expectation among boys and girls [20] [21]. Given these social factors' effect, it is refer that girls who adopted emotion inhibition strategy may be get disparity social feedback from boys which affects their adaptation.

IV. DEPRESSION DISORDER

Empirical studies indicate that the risk for developing major depressive disorder begins to increase dramatically in the early adolescence [22] [23]. Abundant of g studies supported that adolescents who immersed in depression have higher potential risk with impaired academic, poor peer relationships, and lowered life satisfaction [24] [25] [26] Regard with the effect

from culture and gender factor, we hypothesized that the negative associations between inhibition and adolescent depression were affected by interaction between emotion inhibition and gender.

V. METHOD

A. Sample

Participants composed of 309 12-14-years old senior high school students, attending two state schools in Taiwan. Both schools were selected to represent a broad mix of social class backgrounds. The sample consisted of 155 boys and 154 girls with a mean age of 13.4 years.

VI. MEASURES

A. Negative Emotion Regulation Strategies for Children

Emotional inhibition was rated by the subscale of Negative emotion regulation strategies for children (NERSC). The NERSC was used to assess strategies children used to regulate after experiencing negative emotions. The NERSC is a 36-item self-report measurement with six subscales: emotion awareness, emotion expressive, emotion inhibition, emotion venting and aggressive, positively emotion regulation strategies and acceptance [27]. The answer categories for each of the items range from 1 [rarely] to 7[always]. Subjects rated how often statements such as "when something bother me, I would keep it in mind" apply to them. Moderate internal reliability of emotion inhibition subscale (3 items) has been previously established ranging from .63 -.71 and test-retest reliability ranging from .73 to .75 among 11 to 14 years old children. The six strategies model was examining by structural equation modeling found to fit. The internal consistency was .63 in the current study.

B. Children's Depression Inventory Taiwan Vision (CDI_TW)

Children's Depression Inventory (CDI) is a self-report inventory [28] devised to measure depression in children and adolescents. This scale is composed of 27 items that assess, on a scale of 0–2. The CDI_TW have been shown to possess good reliability (.80 to .86) and test-retest reliabilities (.85 to .87) when used in Taiwanese population [18]. The internal consistency in the current study was .85.

VII. RESULTS

A. Preliminary Analysis

Means, standard deviations, and estimates of skew and kurtosis for each variable are reported in Table I.

One-way analysis of variance found significant gender differences were found for emotion inhibition, $F(1, 307) = 2.27, p < .05$, but no significant differences on depression syndrome (Table II). Girls were rated as significantly use more emotional inhibition strategies. Zero-order correlations were conducted to determine the relations between emotional

inhibition and depression syndrome. No significant correlation was found (Table III).

TABLE I
MEANS, STANDARD DEVIATIONS, AND SKEW AND KURTOSIS ESTIMATES FOR THE MEASURES

| | M | SD | Skew | Kurtosis |
|-----|-------|-----|------|----------|
| EI | 11.24 | 4.4 | .30 | -.49 |
| CDI | 14.67 | 7.6 | .45 | -.46 |

Note. EI=emotion inhibition, CDI= depression syndrome.

TABLE II
COMPARISON OF MEAN VALUES OF BOYS AND GIRLS

| | | M | SD | t | p |
|-----|-------|-------|------|-------|------|
| EI | boys | 10.7 | 4.36 | -2.27 | .02* |
| | girls | 11.8 | 4.37 | | |
| CDI | boys | 15.14 | 7.93 | 1.09 | .27 |
| | girls | 14.20 | 7.15 | | |

* $p < .05$ ** $p < .01$

Note. EI=emotion inhibition, CDI= depression syndrome.

TABLE III
CORRELATIONS BETWEEN EMOTION INHIBITION AND DEPRESSION SYNDROME

| | 1 | 2 |
|-----|-----|---|
| EI | | |
| CDI | .01 | |

Note. EI=emotion inhibition, CDI= depression syndrome.

* $p < .05$ ** $p < .01$

B. Relations between Emotional Inhibition Strategies, Gender and CDI

As shown in Table IV, to test the hypotheses that whether the inhibition–depression relationship is depending on level of emotion inhibition and gender, multiple regression analysis were performed.

TABLE IV
MULTI REGRESSION ANALYSES PREDICTING DEPRESSION SYNDROME

| | B | β | ΔR^2 |
|-------------|--------|---------|--------------|
| Step 1 | | | |
| gender | .93 | .06 | .04 |
| Step 2 | | | |
| gender | .97 | .07 | .00 |
| EI | .17 | .02 | |
| Step 3 | | | |
| EI | .923 | .02 | .014* |
| gender | 1.09 | .14 | |
| gender X EI | -.1.83 | -.17 | |

Note. EI=emotion inhibition, CDI= depression syndrome.

* $p < .05$ ** $p < .01$

Effects coding is used on gender variable and standardizing emotion inhibition score in advance. Emotional inhibition was entered on Step1. In Step 2, gender was entered. Finally, In Step 3, two-way interactions between emotion inhibition and gender was entered into the regression. Interaction terms were computed as the multiplicative product of gender and emotion inhibition.

The standardized beta coefficients are displayed in Table III. It can be seen that interactions between emotion inhibition and gender predicting depression was found, accounting for 1.4% of the variance in depression.

Follow-up analysis indicated that the group with the highest level of depression was girls with high levels of emotion inhibition, whose depression score was higher than that of boys with high levels of emotion inhibition (Fig. 1). The group with the lowest level of depression was girls with medium levels of emotion inhibition.

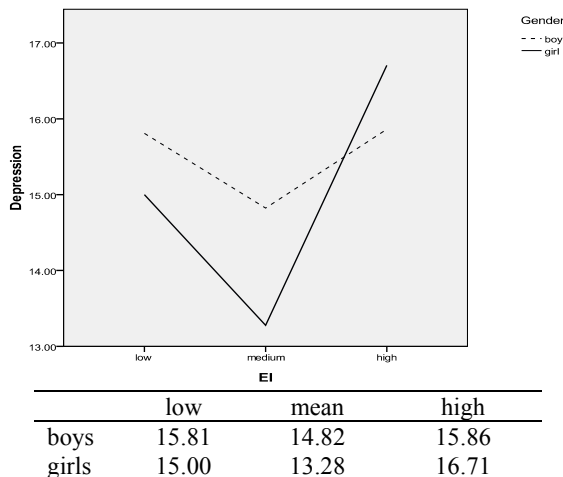


Fig. 1 Interaction between emotional inhibition and gender in predicting depression

VIII. DISCUSSION

The present study involves gender and culture factors to explore the relationship between emotion inhibition strategy and adolescent depression. The main finding was the interaction between emotion inhibition and gender was demonstrated for predicting adolescent depression in East Asia. The result indicates that inhibition–depression relationship isn't direct relationship in Asia culture. Just for girls, levels of emotion inhibition strategy have specific effect on depression disorder. Girls with medium level of emotional inhibition have the lowest level of depression syndrome while girls who have highest levels of emotion inhibition have highest level of depression syndrome. The result illustrates an existing linking between emotion inhibition strategy, gender and depression in Asia culture.

REFERENCES

- [1] R. A. Thompson, "Emotion regulation: A theme in search of definition," In N. A. Fox.(Ed.), *The development of emotion regulation. Monographs of the Society for Research in Child Development*, vol. 59, pp. 25-52, 1994.
- [2] J. J. Gross, and R. W. Levenson, "Emotional suppression: Physiology, self-report, and expressive behavior." *Journal of Personality and Social Psychology*, vol. 64, pp. 970-986, 1993.
- [3] E. A. Butler, B. Egloff, F. H. Wilhelm, N. C. Smith, E. A. Erikson, and J. J. Gross, "The social consequences of expressive suppression". *Emotion*, vol. 3, pp. 48-67, 2003.
- [4] J. J. Gross, & O. P. John, "Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being." *Journal of Personality and Social Psychology*, vol. 85, pp. 348-362, 2003.
- [5] J. J. Gross, and R. W. Levenson, "Hiding feelings: The acute effects of inhibiting negative and positive emotion." *Journal of Abnormal Psychology*, vol. 106, pp. 95-103, 1997.
- [6] G. Joormann, "Cognitive Inhibition and emotion regulation in depression." *Current Directions in Psychological Science*, vol. 1, no. 19, pp. 161-166, 2010.
- [7] J. A. Soto, C. R. Perez, Y.-H. Kim, E. A. Lee, and M. R. Minnick, "Is expressive suppression always associated with poorer psychological functioning? A cross-cultural comparison between European Americans and Hong Kong Chinese." *Emotion*, vol. 11, no. 6, pp.1450-1455, 2011.
- [8] E. A. Butler, T. L. Lee, and J. J. Gross, "Emotion regulation and culture: Are social consequences of emotion suppression culture specific?" *Emotion*, vol. 7, pp. 30-48, 2007.
- [9] I. B. Mauss, and E. A. Butler, "Cultural context moderates the relationship between emotion control values and cardiovascular challenge versus threat responses." *Biological Psychology*, vol. 84, pp. 521-530, 2010.
- [10] H. R. Markus, and S. Kitayama, "Culture and the self: Implications for cognition, emotion, and motivation." *Psychological Review*, vol. 98, pp. 224-253, 1991.
- [11] H. C. Triandis, "The self and social behavior in differing cultural contexts." *Psychological Review*, vol. 96, no. 3, pp. 506-520, 1989.
- [12] J. L. Tsai, and R.W. Levenson, "Cultural influences on emotional responding." *Journal of Cross-Cultural Psychology*, vol. 28, pp. 600-625, 1997.
- [13] S. Nolen-Hoeksema, *Sex Differences in Depression*. Stanford, CA : Stanford University Press, 1990.
- [14] M. M. Weissman, et al. "Cross-National Epidemiology of Major Depression and Bipolar Disorder." *The Journal of American Association*, vol. 276, no. 4, pp. 293-299, 1996.
- [15] S. Nolen-Hoeksema, and I. S. Girgus, "The emergence of gender differences in Depression During adolescences." *Psychological Bulletin*, vol. 115, pp. 423-43, 1994.
- [16] S. Nolen-Hoeksema, and J. S. Girgus, "Responses to depression and their effects on the duration of depressive episodes." *Journal of Abnormal Psychology*, vol. 100, pp. 569-582, 1994.
- [17] B. L. Hankin, and L. Y. Abramson, "Development of sex differences in depression: Description and possible explanations." *Annals of Medicine*, vol. 31, pp. 372-379, 1999.
- [18] B. L. Hankin, and L.Y. Abramson, "Development of gender differences in depression: An elaborated cognitive vulnerability-transactional stress theory." *Psychological Bulletin*, vol. 127, no. 6, pp. 773-796, 2001.
- [19] M. K. Underwood, J. D. Coie, and C. R. Herbsman, "Display rules for anger and aggression in school-age children." *Child Development*, vol. 63, pp. 366-380, 1992.
- [20] T. L. Davis, "Gender differences in masking negative emotions: Ability or motivation?" *Developmental Psychology*, vol. 31, no. 4, pp. 660-667, 1995.
- [21] T. Chaplin, P. Cole, and C. Zahn-Waxler, "Parental socialization of emotion expression: Gender differences and relations to child adjustment." *Emotion*, vol. 5, pp. 80-88, 2005.
- [22] S. Nolen-Hoeksema, and I. S. Girgus, "The emergence of gender differences in Depression During adolescences." *Psychological Bulletin*, vol. 115, pp. 423-43, 1994.
- [23] S. B. Sorenson, C. M. Rutter, and C. S. Aneshensel, "Depression in the community: An investigation into age of onset." *Journal of Consulting and Clinical Psychiatry*, vol. 59, pp. 541-546, 1991.
- [24] E. T. Aronen, and M. Soininen, "Childhood depressive symptoms predict psychiatric problems in young adults." *Canadian Journal of Psychiatry*, vol. 45, pp. 465-470, 2000.
- [25] D. Devine, T. Kempton, and R. Forehand, "Adolescent de-pressed mood and young adult functioning: A longitudinal study." *Journal of Abnormal Child Psychology*, vol. 22, pp. 629-640, 1994.
- [26] D. M. Fergusson, and L. J. Woodward, "Mental health, educational and social role outcomes of adolescents with depression." *Archives of General Psychiatry*, vol. 59, no.3, pp.225-231, 2002.
- [27] Jia. Ru. Li, & Ching-Wen, Lin. "Psychometric properties of the Negative Emotion regulation strategies." submitted for publication.
- [28] Sue. Huei. Chen, *Children's Depression Inventory-Technical Manual Update*. Taipei: Psychological Publishing Co., Ltd, 2008.