Do Gender Differences Affect the Psychological Well-being of High Schoolers in Thailand?

Walailak Pumpuang[1]*, Nopporn Vongsirimas[1], and Piyanee Klainin-Yobas[2]

[1] Faculty of Nursing, Mahidol University, Thailand
[2] Alice Lee Centre for Nursing Studies, National University of Singapore, Singapore
* Walailak Pumpuang, corresponding author. Email: whuntip1@gmail.com

Abstract

This cross-sectional descriptive study aimed to examine factors affecting the psychological well-being of female and male Thai students, and to compare gender differences in a psychological well-being promotion model. Participants were 624 students from three secondary schools in Bangkok and Nakhon Pathom provinces, Thailand. Data were collected in 2018 through self-administered questionnaires, and analyzed using descriptive statistics and structural equation modeling. Findings indicated that all factors from the psychological well-being promotion model influenced psychological well-being among female and male students. Resilience and mindfulness were the strongest predictors affecting psychological well-being in both female and male students. Furthermore, there were not any gender differences concerning predictors and statistical parameters of psychological well-being among Thai secondary school students. Nurse educators or healthcare providers may offer interventions to enhance students' well-being by strengthening resilience, mindfulness, self-efficacy, and social support. The same interventions, considering their preferences, may be provided to both male and female students. Future research should evaluate the effectiveness of the interventions using rigorous research methodology.

Keywords

Gender difference; psychological well-being; Thai students

Introduction

Mental health problems among adolescents have been recognized globally, and some of those problems (such as depression) are leading causes of death. It is estimated that 10-20% of adolescents worldwide experience mental health issues (World Health Organization, 2019). Adolescent females are more prone than adolescent males to internalize problems such as depression, eating disorders, and suicide attempts. Adolescent males are more likely to act out and exhibit externalize problems such as conduct disorder, substance use disorders, and completed suicide (Ekasawin et al., 2016; Matud et al., 2019; Van Droogenbroeck et al., 2018). Gender may be a demographic factor that determines mental health problems. Gender difference has been examined in various psychological variables such as cognitive performance, suicidal ideation, social behaviors, personality, psychopathology, psychological complaints, and psychological well-being (Hyde, 2014; Ibrahim et al., 2017; Matud et al., 2019; Savoye et al., 2015). However, previous results relating to psychological well-being are inconclusive (Gómez-López et al., 2019; Hasan, 2019). Gender differences in promoting psychological well-being and preventing adverse experiences deserve further investigation.

Psychological well-being (PWB) refers to living a life in a satisfying and meaningful way. It plays a protective role against illness and disabilities by strengthening positive characteristics (Harding et al., 2019; Neuman & Fawcett, 2002; Ryff, 2014). PWB serves as a key indicator for positive developmental changes and optimal mental health. During adolescence, PWB is crucial as it has an impact on the transition to adulthood. Adolescents experience stress concerning biological, psychological, and social changes but, successful stress management results in positive experiences and PWB (Anuradha et al., 2012; Žukauskienė, 2013). A previous study revealed that PWB had two components: (a) autonomy and personal growth, and (b) negative triads (Klainin-Yobas et al., 2020). Adolescents with elevated levels of autonomy are more likely to report higher levels of personal growth, purpose in life, and overall PWB (Melendro et al., 2020). A positive cognitive triad (i.e., positive attitudes about the self, world, and future) strengthens adolescents' resilience and, therefore, enhances life satisfaction and well-being (Mak et al., 2011). Studies in Thailand found that students had a moderate level of PWB (Thavorn et al., 2018), and gender played a role in determining PWB. Specifically, male Thai students had lower happiness and PWB than female students (Calderon et al., 2019). Similarly, Tangmunkongvorakul et al. (2019) found that female students had higher levels of PWB than male students. However, another study reported that males had higher life-satisfaction than females (Lucktong et al., 2017).

Findings from other countries found the same inconclusive results related to gender differences in PWB. In India, one study reported that female students had better PWB than male students (Waghmare, 2017), whereas another research did not observe gender differences in PWB (Hasan, 2019). Perez (2012) found that Filipino adolescent males and females were different in some components of PWB, such as purpose in life, relationships with peers and father, and autonomy. Given the conflicting results, there is a need for studies examining gender differences in psychological well-being.

The model of psychological well-being promotion (Harding et al., 2019) was grounded in Newman's system theory and philosophy of psychological well-being. The model explains that stress affects psychological well-being and protective resources, including internal resources (i.e.,

mindfulness, self-efficacy, and resilience) and external resources (i.e., social support), which are activated when dealing with stress, to protect individuals from stress. This model is useful for promoting psychological well-being. Existing studies in New Zealand, Singapore, and the Philippines found that stress, mindfulness, self-efficacy, resilience, and social support were the best predictors of psychological well-being among university students (Harding et al., 2019; He et al., 2018; Klainin-Yobas et al., 2016). In Thailand, few studies have examined factors related to promote psychological well-being among university students, including goal orientation, self-esteem, body image, mindfulness, social support, resilience, happiness, and stress (Calderon et al., 2019; Sosik et al., 2017; Thanoi et al., 2018). However, there are insufficient studies related to predictive factors to promote the psychological well-being of female and male secondary school students. Such limited information may impede the development of useful interventions for adolescents. Therefore, this study was conducted to evaluate the influence of gender on the psychological well-being of Thai secondary school students.

Objectives

1. To examine factors predicting PWB among secondary school students in Thailand

2. To compare the psychological well-being model between female and male secondary school students

Methods

Research design

This study examined interrelationships among study variables across gender in a cross-sectional research design.

Population and sample

The target population included students enrolled in three secondary schools located in Bangkok and Nakhon Prathom provinces, Thailand. A stratified sample was applied to recruit potential participants. The secondary school students would be included within the study if their age was more than 15 years, and they did not have a history of mental disorders. Sample size calculation was performed using power analysis with an effect size of .88 from a previous study (Gibbon et al., 2011), power of 0.80, and significant level at 0.05. Hence, the sample size should be at least 605. Eleven students declined entry, and 30 students were added for convenience as they shared the classrooms where data collection occurred, resulting in 624 participants in this study.

Data collection and tools

This study commenced after receiving permission from the University Institutional Ethics Review Board (approval number IRB-NS2017/397.2301). The researchers contacted principals for their

permission to allow data collection at the three secondary schools. The schools were classified by school type (girls, boys, or co-educational school). The schools were classified to ensure equal numbers of students across each school (N=202 [per school]). Afterward, the researchers sought help from guidance teachers to randomly select classrooms. Then the researchers met with students in the selected classrooms to inform them about the study's purpose and seek their participation. After the students and their parents signed consent forms, they then completed a self-reported questionnaire, which took 30 minutes to complete. The questionnaire entailed the following instruments:

1. Personal characteristics questionnaire, which covered gender, age, grade, religion, daily expense, and family status of parents.

2. The Psychological Well-Being (PWB) scale contained 18 items assessing six components of the students' psychological well-being (Ryff, 1989). This instrument was translated to Thai using a back-translation method to ensure semantic meaning between the original and Thai versions (Klainin-Yobas et al., 2020). For this study, we conducted exploratory and confirmatory factor analyses on the scale to test its factorial structure. Results indicated that it consisted of two distinct factors, including Autonomy & Growth and Negative Triad factors. The autonomy & growth factor contains items that describe how respondents are confident in their thoughts and personality, and how they feel that life is a process of growth and learning. Higher scores reflect better psychological well-being. The negative triad factor encompassed items expressing perceived difficulty in achievement, daily life, and interpersonal relationships. Lower scores for this factor signify better psychological well-being. Cronbach's alpha coefficient of the total scale was .78.

3. The Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2003). This scale has 15 items rating in six response categories (1=most always -6=none) and was translated into Thai (Christopher et al., 2009). The total scores are calculated by multiplying each item, and the range of the score was 15 to 90. Higher scores indicated higher mindful attention. Cronbach's alpha coefficient of the total scale was .87.

4. The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al., 1990). The scale was translated to Thai by Boonyamalik (2005) and has 12 items, with categories using a seven-point rating (1 [absolutely disagree] to 7 [absolutely agree]). In this study, results from factor analysis revealed that this scale entailed three factors: support from family, support from a friend, and support from significant others. Therefore, each subscale score ranges from 4 to 28, with higher scores indicating higher perceived social support. Cronbach's alpha coefficient of the total scale was .92.

5. The Connor-Davidson Resilience Scale (CD-RISC) (Connor & Davidson, 2003). This scale was translated into Thai by Vongsirimas et al. (2017). CD-RISC has ten items with categories using a five-point rating (0 [not true absolutely] to 4 [true absolutely]), and the range of scores was 0 to 40, with higher scores indicating higher resilience. Cronbach's alpha coefficient of this study was .86.

6. The Generalized Self-Efficacy Scale (GSES) (Schwarzer & Jerusalem, 1995). This instrument's ten items with categories rated in four-point responses for evaluating self-efficacy from 1 (not true) to 4 (absolutely true). The scores ranged from 10 to 40, with higher scores indicating higher self-efficacy. Cronbach's alpha coefficient of this study was .84.

7. The Perceived Stress Scale-10 (PSS-10) (Cohen et al., 1983). This instrument was translated to Thai by Wongpakaran and Wongpakaran (2010). A five-point scale was used to rate the level of perceived stress (0 [none] to 4 [frequently]), and the range of scores was 0 to 40, with a higher score indicating higher levels of perceived stress. Cronbach's alpha coefficient of this study was .79.

Data analysis

IBM SPSS was used to analyze descriptive statistics and zero-order correlations among all variables. Then, structural equation modeling (SEM) using AMOS version 18, was used to test the effects of the independent variables (e.g., stress, resilience, self-efficacy, support from a friend, support from family, and support from others) on dependent variables (e.g., the autonomy & growth and negative triad factors of PWB). SEM is a multivariate statistical method to test complex relationships with multiple independent and dependent variables (Stein et al., 2012). SEM (via AMOS 18) was used to perform multigroup analysis and to evaluate gender differences in the predicting effects of the independent variables on PWB. Two hypothetical models were submitted to AMOS. The first model did not have any equality constraints on all statistical parameters of the female and male subgroups (i.e., each subgroup had different factor loadings and regression coefficients). The second model imposed equality constraints on all statistical parameters between the subgroups (i.e., both subgroups had the same factor loadings and regression coefficients). To examine if the two hypothetical models fit with sample data, the following goodness-of-fit indices were used, including chi-square per degree of freedom ($\chi/df <$ 5), Tucker-Lewis Index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) (Byrne, 2010). To consider goodness-of-fit, the range of CFI and TLI were between 0 and 1, and values were greater than 0.90 (Byrne, 2010). RMSEA value was below 0.05, reflecting an excellent fit, between 0.05-0.08 reflecting a reasonable fit, and between 0.08 and 1.0 reflecting an acceptable fit (Byrne, 2010).

Findings

Characteristics of participants

Participants were 624 secondary students comprising 359 female students (57.5%) and 265 male students (42.5%). They were in grades 10 (37.18%, n=232), 11 (31.25%, n=195), and 12 (31.09%, n=194). Age of the students were 15-19 years with an average age of 16.4 (SD=0.97). Most students were Buddhists (92%, n=574), lived with both parents in the same household (89.9%, n=561), and had sufficient monthly family income (94.1%, n=587).

The study variables

The findings from correlation analyses among study variables are shown in Table 1. All variables were significantly correlated, ranging from low to moderate levels (r= 0.15 to 0.62). Descriptions of the study variables (e.g., PWB, stress, resilience, mindfulness, self-efficacy, and social support) of females and males were shown in Table 2. Female students ($M=72.91, SD=9.03$) had slightly lower levels of overall psychological well-being than male students (M=73.55, SD= 9.08).

Table 1: Correlation Analyzes of the Causal Model of PWB of Female and Male Students

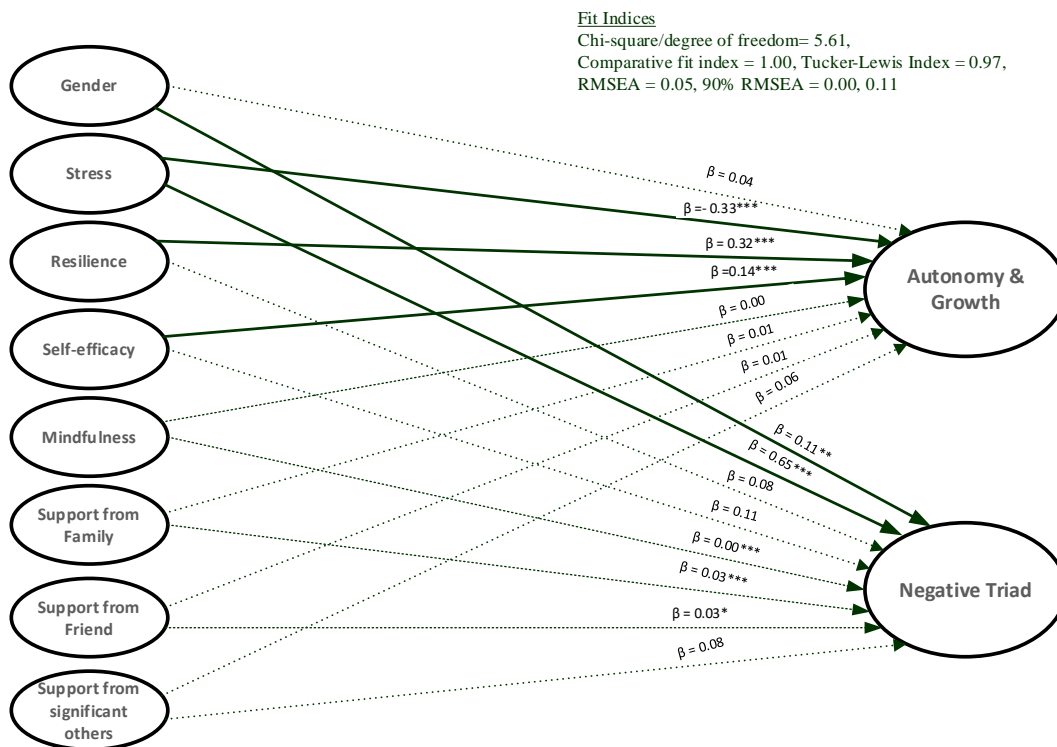| Gender	Variables	Stress	Resilience	Efficacy	Mindful	Family	Friend	Others	Negative-triads	Autonomy
	Stress	1.00								
	Resilience	-0.47**	1.00							
	Efficacy	-0.44**	0.61**	1.00						
	Mindful	-0.43**	0.29**	0.13*	1.00					
Male	**Family**	-0.30**	0.23**	0.16*	0.21**	1.00				
	Friend	-0.37**	0.38**	0.31**	0.22**	0.48**	1.00			
	Other	-0.28**	0.28**	0.25**	0.18*	0.60**	0.58**	1.00		
	Negative-triads	-0.44**	0.28**	0.26**	0.41**	0.31**	0.33**	0.34**	1.00	
	Autonomy	-0.40**	0.62**	0.52**	0.32**	0.31**	0.35**	0.32**	-0.40**	1.00
	Stress	1.00								
	Resilience	-0.45**	1.00							
	Efficacy	-0.42**	0.58**	1.00						
	Mindful	-0.57**	0.28**	0.23**	1.00					
Female	**Family**	-0.36**	0.15*	0.08	0.25**	1.00				
	Friend	-0.30**	0.25**	0.17*	0.25**	0.39**	1.00			
	Other	-0.26**	0.16*	0.16*	0.20*	0.57**	0.56**	1.00		
	Negative-triads	-0.43**	0.30**	0.23**	0.41**	0.38**	0.32**	0.29**	1.00	
	Autonomy	-0.46**	0.62**	0.54**	0.40**	0.23**	0.31**	0.25**	-0.46**	1.00

*Note: * p< 0.05, ** p< 0.01*

Table 2: Mean and SD of All Causal Variables of the PWB Model

	Stress	Resilience	Mind-fullness	Self-efficacy	Family support	Friend support	Support from others	PWB_Negative triad	PWB_Autonomy	Total_PWB
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Male	17.54	26.98	63.06	27.48	22.17	20.78	21.00	24.76	38.80	**63.56**
	(4.84)	(4.90)	(10.52)	(3.89)	(4.87)	(4.62)	(5.32)	(4.87)	(5.93)	**(8.99)**
Female	18.81	26.18	61.96	25.04	22.31	22.14	21.99	25.16	37.87	**63.04**
	(4.54)	(4.98)	(10.32)	(4.24)	(4.88)	(4.80)	(5.17)	(4.37)	(5.80)	**(8.42)**

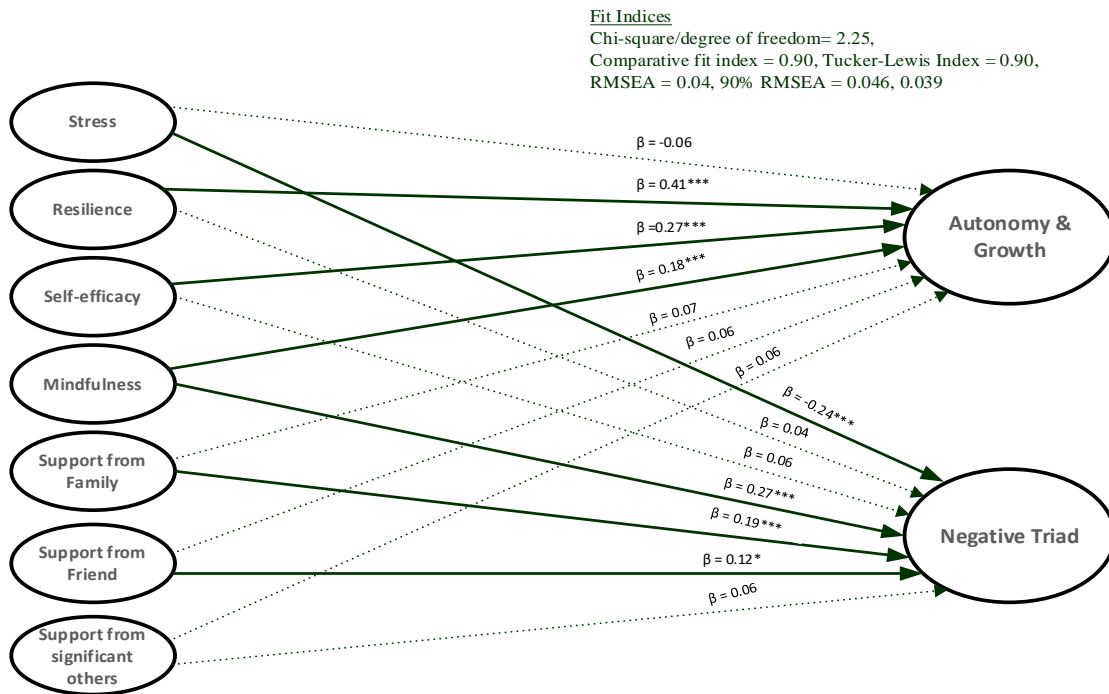## Effects of independent variables on the PWB model across gender

A single group analysis suggested that gender did not significantly affect the autonomy & growth factor ($\beta = 0.04$, $p = 0.88$). However, gender had a significant effect on the negative triad factors of PWB ($\beta = 0.11$, $p = 0.01$). Fit indices were acceptable ($\chi/df = 5.61$, TLI = 0.97, CFI = 1.00, RMSEA = 0.05, 90% RMSEA = 0.00, 0.11) as shown in Figure 1. In addition, subgroup analyses for the female and male subgroups are shown in Figures 2 and 3. The second hypothetical model (with equality constraint) had a better fit with sample data ($\chi/df = 2.25$, TLI = 0.90, CFI = 0.90, RMSEA = 0.04, 90% RMSEA = 0.046, 0.039). Such findings suggested that the male and female subgroups had the same statistical parameters. In other words, the effect of causal variables on PWB was not different across genders. For both subgroups, resilience was the strongest predictor of the autonomy & growth factor of PWB ($\beta = 0.41$, $p < 0.001$), followed by self-efficacy ($\beta = 0.27$, $p < 0.001$) and mindfulness ($\beta = 0.18$, $p < 0.001$). Furthermore, mindfulness was the strongest variable influencing the negative triad factor of PWB ($\beta = 0.27$, $p < 0.001$), followed by perceived stress ($\beta = 0.24$, $p < 0.001$), social support from family ($\beta = 0.19$, $p < 0.001$), and social support from friends ($\beta = 0.12$, $p < 0.001$). However, support from significant others was not significantly associated with both factors of PWB. For the male subgroup, all causal variables explained 76.68% variance on the autonomy & growth factor, and 52.5% on the negative triad factor of PWB. Similarly, for the female subgroup, all causal variables explained 73.10% variance on the autonomy & growth factor: and 51.50% on the negative triad factor of PWB.

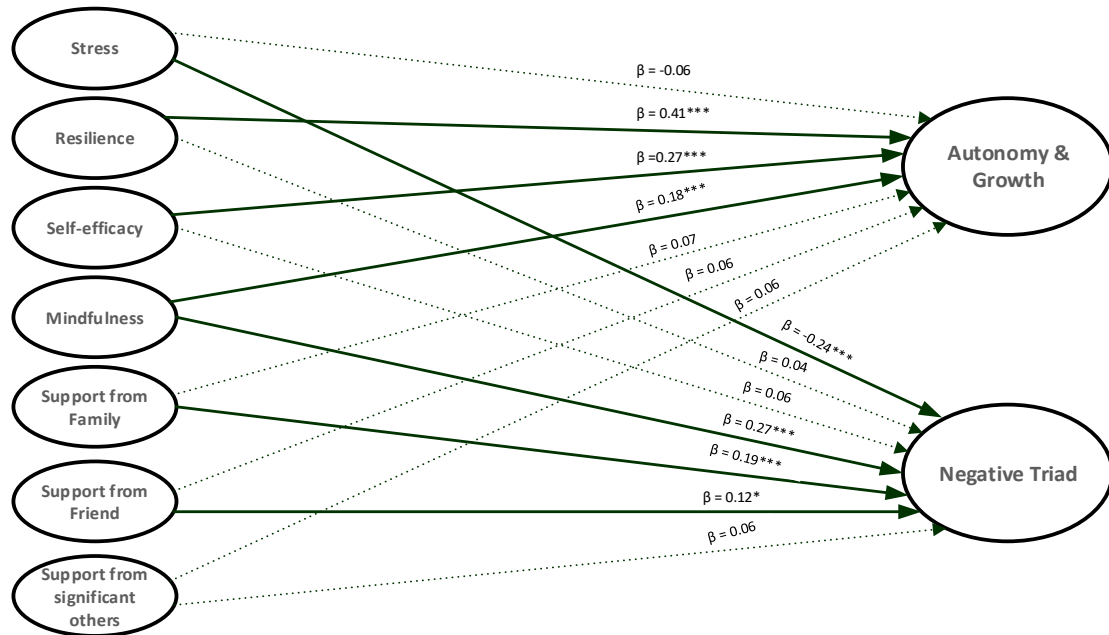**Figure 1:** Effects of Gender on Dependent Variables: A Single-Group Analysis

*Note: * p<0.05, ** p<0.01, *** p<0.001*

Figure 2: A Causal Model of PWB Among Male Students

Fit Indices
Chi-square/degree of freedom= 2.25,
Comparative fit index = 0.90, Tucker-Lewis Index = 0.90,
RMSEA = 0.04, 90% RMSEA = 0.046, 0.039

Stress
Resilience
Self-efficacy
Mindfulness
Support from Family
Support from Friend
Support from significant others

Autonomy & Growth

Negative Triad

$\beta = -0.06$
$\beta = 0.41^{***}$
$\beta = 0.27^{***}$
$\beta = 0.18^{***}$
$\beta = 0.07$
$\beta = 0.06$
$\beta = 0.06$
$\beta = -0.24^{***}$
$\beta = 0.04$
$\beta = 0.06$
$\beta = 0.27^{***}$
$\beta = 0.19^{***}$
$\beta = 0.12^{*}$
$\beta = 0.06$

*Note: * p<0.05, ** p<0.01, *** p<0.001*

Figure 3: A Causal Model of PWB Among Female Students

Stress
Resilience
Self-efficacy
Mindfulness
Support from Family
Support from Friend
Support from significant others

Autonomy & Growth

Negative Triad

$\beta = -0.06$
$\beta = 0.41^{***}$
$\beta = 0.27^{***}$
$\beta = 0.18^{***}$
$\beta = 0.07$
$\beta = 0.06$
$\beta = 0.06$
$\beta = -0.24^{***}$
$\beta = 0.04$
$\beta = 0.06$
$\beta = 0.27^{***}$
$\beta = 0.19^{***}$
$\beta = 0.12^{*}$
$\beta = 0.06$

*Note: * p<0.05, ** p<0.01, *** p<0.001*

Discussion

This study explored the factors predicting psychological well-being (PWB) among Thai secondary school students across genders. Our results suggested no gender differences in the effects of the independent variables on PWB. For the male subgroup, all the independent variables explained 76.68% variance on the autonomy & growth factor, and 52.5% on the negative triad factor of PWB. Likewise, for the female subgroup, all the independent variables explained 73.10% variance on the autonomy & growth factor, and 51.50% on the negative triad factor of PWB. Furthermore, resilience was the strongest factor predicting the autonomy and personal growth factor, while the strongest factor predicting the negative triad factor of PWB was mindfulness.

Male and female students with higher levels of resilience were more likely to represent greater autonomy & growth, the crucial component of PWB. This is congruent with findings from previous studies supporting that resilience was the best predictor in adolescents (Chow et al., 2018; Harding et al., 2019; He et al., 2018; Klainin-Yobas et al., 2016). Resilience is an individual's internal resource, which enhances the capacity to adapt well in the face of stressful events or difficulties (Mak et al., 2011). Resilience is also a protective factor associating with–positive thinking about self, surrounding, and future (Mak et al., 2011). Adolescents with high levels of resilience are able to create contexts suitable to personal needs and perceive themselves as self-growing and self-satisfied (Sagone & De Caroli, 2014). Resilient students might be able to overcome social pressures to think or act healthily and regulate their behaviors. As such, resilient students could recover from difficult life experiences and achieve positive outcomes such as increased life satisfaction, decreased depression, and lower self-harm (Akbari & Khormaiee, 2015; Bore et al., 2016). Thus, resilience is an essential factor for promoting PWB among female and male students.

Mindfulness is the only factor predicting the two components of PWB (negative triad, and autonomy, and personal growth) across gender in this study. According to the facets of mindfulness, it increases the present moment awareness of one's experience with a non-judgmental attitude (Kabat-Zinn, 2003). With mindful attention to ongoing thoughts, emotions, and sensations, individuals can alleviate the adverse physiological effects of stress and reduce cognitive distortion. These mechanisms lead to better psychological well-being (Tan & Matin, 2012). Being mindful enables one to intentionally view one's thoughts and emotions and control their mental manner (Sampath et al., 2019). By minimizing an automatic mode (e.g., non-mindful or absent-minded behaviors), students may be able to successfully cope with their stressful events, resulting in decreased psychological distress. Mindfulness might help students become aware of personal values and desired goals, and minimize environmental pressures and cognitive distortions, resulting in greater well-being. Stress, support from friends, and support from family predicted the negative triad factor of PWB. Self-efficacy predicted the autonomy and personal growth factor of PWB. The effects of these independent variables on PWB were also observed in previous studies (Harding et al., 2019; He et al., 2018; Klainin-Yobas et al., 2016). During adolescents, female and male students are exposed to various stressors from their transition to adulthood, and these may influence their well-being. Stress might trigger the development of depression, which, in turn, activates negative triads. Therefore, students with stress and depression might express negative attitudes toward themselves, others, and the future. In line

with this, the cognitive vulnerability-stress model of depression (Beck, 1987) postulated that people with depression have 'depressogenic schemas.' These schemas entail dysfunctional attitudes about self and the world, built upon negative experiences in people's lives (Beck, 1987). Previous studies also revealed that adolescents with uncontrolled stress had poorer psychological well-being, and greater anxiety and depression symptoms (Burger & Samuel, 2017; Hezomi & Nadrian, 2018; Ringdal et al., 2020).

When exposed to stress, students need protective resources such as self-efficacy and social support to handle their stressors. It is possible that students with high self-efficacy and high social support can focus on opportunities, use good problem-solving abilities, feel powerful and hopeful, and perceive lower psychological distress (Hezomi & Nadrian, 2018; Triana et al., 2019). Self-efficacy is seen as a protective factor for adolescents. Students who perceive themselves as highly efficient could develop positive attitudes toward their abilities to cope with psychological stress and reach their desired goals. They may be able to function autonomously and independently. Students with high levels of self-efficacy expressed greater life satisfaction and PWB (Çakar, 2012). Similarly, Burger and Samuel (2017) explained that self-efficacy functions as a stress-buffering resource that enables adolescents to believe their capabilities and to face stressors with confidence.

In this study, social support from family and friends could influence some part of PWB. The influence of social support was evident in previous studies, such as Lopez-Zafra et al. (2019), who revealed that adolescents with higher social support had greater life satisfaction and lower depression. Social support helps adolescents reduce stress and psychological problems such as depression, perceive more self-confidence, and a high supporting environment, to deal with stressors (Adyani et al., 2019). Pierce and Hoelterhoff (2017) indicated that the cognitive triad about the self, the world, and the future was evident in social support from peers for students to seek help. This was a positive resource for students to receive emotional and social support.

In our study, most students lived with both parents. Batool and Ahmad (2014) found that adolescents who lived with single parents had lower perceived social support and PWB than ones with both parents alive. Living with a two-parent family and spending family time with love and connectedness led to adolescent happiest (Gray et al., 2013). This is supported that adolescents with high social support from family conquer the transition to adulthood and have happiness and PWB. Thus, more research is necessary to evaluate the influence of family factors on PWB for expanding our findings.

Among various sources of social support, this encouragement from others did not predict PWB. This is not consistent with the previous study of Poudel et al. (2020), which found that three resources of social support could predict PWB. However, support from family was higher than friends and others due to the cultural factor in which parents provided parental care and involvement for the ages of students. Early adolescents tend to spend their time during their daily lives with family and at school, and middle adolescents tend to satisfy their lives with friends. This may be explained that the type of support may be different in age-dependent effect. In addition, on the scale of support from others, the measurement (MSPSS) may be particularly relevant to the students in which significant others were defined when interest in romantic relationship emerges and the influence of adult outside of the family increases (Vongsirimas et al., 2018). This may limit the effect of this support on PWB.

Our findings indicated no gender differences in the model of PWB. This is congruent with previous studies related to the PWB promotion model (Harding et al., 2019; He et al., 2018; Klainin-Yobas et al., 2016). Notably, the casual factors, including stress, mindfulness, self-efficacy, resilience, and social support, significantly affected psychological well-being across gender. It is possible that female and male secondary students were not different in terms of their perceived stress, stress management skills, and mechanisms to achieve PWB (Phophichit, 2019).

Another explanation is that both male and female students have practiced a lifelong collectivist principle while living in the Thai culture. As such, the students perceived themselves as part of social relationships and, their thinking and actions are influenced by closest social resources such as parents, friends, and teachers. When they encountered difficulties in their lives, they were more likely to seek help and advice from family and friends (Chotima & Blauw, 2016). Hence, students with higher levels of social support would experience less psychological distress (Handagoon & Varma, 2019). However, few studies found contradictory results or indicated gender differences in PWB (Waghmare, 2017). This inconclusive outcome may result from cultural differences, the age range of the sample, gender roles, and social expectation towards gender expression (Hyde, 2014; Matud et al., 2019). Additional studies are needed to examine the gender factor on PWB in diverse cultural settings.

Conclusion and suggestions

This study reported factors predicting psychological well-being (PWB) and compared the PWB model across gender. Except for support from significant others, all variables in the PWB promotion model predicted one or both factors of PWB across gender. Resilience was the greatest factor influencing autonomy and person growth factor of PWB in both female and male students, and mindfulness was the only factor influencing both components of PWB across genders. Moreover, the causal models of PWB were not different between female and male students.

Therefore, further studies may examine other demographic factors determining psychological well-being, such as family factors. In addition, before developing mental health interventions or promoting psychological well-being, we should consider the internal and external resources of students and provide interventions across gender. However, this study is a cross-sectional study, so it has some limitations.

Further research should conduct longitudinal research to confirm causal relationships among study variables across gender. Furthermore, more research can be performed in various cultural contexts and schools in other parts of Thailand, such as in cities in the urban and rural areas, to increase a broader context to utilize research findings. In addition, intervention research can be carried out to examine psychological interventions to buffer the effects of stressors and strengthen personal resources (self-efficacy, mindfulness, resilience, and social support from family and friends) for adolescents across gender and thus enhancing psychological well-being.

Funding Information

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