Resilience is the capacity of a dynamic system to recover from significant challenges, overcoming of stress or adversity. In addition, it is viewed as an internal trait or set of traits, individual recovering from the impingements of an adverse environment. Resilience involves an interaction between risk and protective factors, and the type of intervention which is offered to the adolescent. The concept of resilience is also closely linked to the attachment to sibling relationships in residential care and self, it is particularly relevant for understanding the psychosocial adaptation of institutionalized adolescents.

Orphans are children who have lost one or both parents due to any causes. In 2014, there was an estimate of 140 million orphans worldwide. Adolescence in residential care is a significant life transition which usually results from traumatic situations involving personal, social, and family risk to ensure...
a healthy development. Fostered youths have higher rates of mental health disorders, which may be due in part to the effects of trauma, removal from home and family, maltreatment, multiple placements, disrupted attachments, poverty, gestational exposures, and genetic vulnerability. Many children encounter such adversities but fair considerably well in spite of the challenges and may be considered to be resilient.

Foster homes include both family (kin caregivers) and non-family homes. Home for children in Thailand or foster care means a facility that provides care and development for children in need of assistance. It provides care for boys and girls who are homeless, orphans, abandoned, not raised by their parents, or unlawfully raised or exploited, or abused. Based on the Youth Resilience Framework and related literature, factors that positively influence resilience included problem-focused coping, social connectedness, self-concept and school engagement. In addition to a relatively small number of publications, an integrative approach to explain the predictors of resilience in Thai population has been general, not specific to resilience among early adolescents living in homes for children. Therefore, the purpose of our present study was to examine resilience in Thai early adolescents living in homes for children and its predictors including social connectedness, problem-focused coping, self-concept, and school engagement. The results of this study could contribute to knowledge and the development of the program to promote resilience among Thai early adolescents living in homes for children. This study hypothesized that social connectedness, problem-focused coping, self-concept, and school engagement as independent variables predict resilience in early adolescents living in homes for children as the dependent variable.

**Methods**

In this cross-sectional, predictive study, the target population was composed of Thai early adolescents aged 10 -14 years living in homes for children. All 18 homes for children are distributed throughout the Bangkok Metropolitan region and its vicinities, containing approximately 547 early adolescents. The study was conducted from September to October, 2019.

Since this study was a part of the research project entitled “Factors affecting resilience among early adolescents living in homes for children: a model testing,” the sample size was estimated based on the number of estimated parameters in structural equation model (SEM) analysis. With 12 estimated parameters including 2 variances, 1 covariance, 6 paths, and 3 structure errors, a sample size of 240 participants was required to meet the statistical power criterion of 20 subjects per estimated parameter.

**Sampling procedure**

The researcher employed a proportional sample size estimation by calculating the number of the eligible adolescents aged 10 - 14 years proportional to numbers of potential participants in each of the 18 homes until reaching 240 subjects. At each home, prospective participants were selected using a convenience sampling method. All 18 homes for children were distributed throughout the Bangkok Metropolitan region. Details were from the following. In the city of Bangkok, there were 9 homes specifically 2 general children homes, 1 children reception home which belonged to the government's Department of Children and Youth, and 6 private children home facilities. There were about 300 children aged 10 - 14 years. A simple random sampling technique was used by drawing homes’ name of 2 from Government's Department of Children and Youth and 2 from private facilities which represented 25 - 30% of the total population. All eligible participants of the selected 4 homes were invited to participate. A total of 132 individuals participated the study. Pathum Thani province had 2 homes under the government's Department of Children and Youth housing 110 children aged 10 - 14 years. For each home, 24 – 25 children were asked to voluntarily participate. A total of 49 participants were recruited. In Nonthaburi province, there were 2 homes under the government’s Department of Children and Youth housing 87 children aged 10 - 14 years. A total of 38 participants, 19 from each home, were recruited for voluntary participation. Nakhon Pathom province had 2 homes under private facilities housing about 30 children aged 10 - 14 years. A total of 13 participants were recruited. In Samut Prakan province, 2 facilities, one child reception home under the government's Department of Children and Youth and the other private home. Only children in the facility under the government were recruited. Of the 20 children aged 10 – 14 years, 8 participants were recruited. Finally, Samut Sakhon province had one home for child reception under the government supervision and no
eligible participants were available. No participants were recruited from this province.

Participant protection

The study protocol was approved by the Institutional Review Board of Faculty of Nursing, Burapha University approved (approval number: 05-05-2562). Consents and agreements were obtained from Director General of the Department of Children and Youth and the directors of home for children under the government's Department of Children and Youth, Ministry of Social Development and Human Security, and non-governmental or private facilities. Participants and guardians were informed about the voluntary nature of the study. The participants signed the informed assent form and the guardian (i.e., the director of the home for children) signed the informed consent form.

Research instruments

A self-administered questionnaire with 6 sections was as follows. In the first section, demographic characteristics of the participant including age, gender, and education level were collected. The second section was the Resilience Factors Scale (RFS) which was developed in Thai language by Takviriyunan. The scale consists of 6 components including determination and problem-solving skills, personal support, other kinds of support, positive thinking, assertiveness, balance of self and social skills with a total of 25 items. The scores range from 25 to 100 points with a 4-point rating scale ranging from 1 (irrelevant) to 4 (extremely relevant). The higher the score, the higher the resilience. In addition, resilience is categorized into 3 levels of low, medium and high corresponding to total scores of 25 - 50, 51 - 75, and 76 – 100 points, respectively. In our study, the scale was found to have a high internal consistency reliability with a Cronbach’s alpha coefficient of 0.88.

The third section was the Social Connectedness Scale-Revised (SCS-R) which was developed in English by Lee and co-workers. The researcher obtained the permission to use and translate into Thai from the tool’s developer. The SCS-R has 20 items. The total sum of the scores ranged from 20 to 120 points with a 6-point rating scale ranging from 1 (strongly disagree) to 6 (strongly agree). Higher score on the SCS-R reflects a stronger sense of social connectedness. In our study, the scale was found to have a high internal consistency reliability with a Cronbach’s alpha coefficient of 0.80.

In the fourth section, a subscale called “problem-focused coping” of the Coping Behavior Questionnaire (CBQ) was used to measure problem-focused coping skill. CBQ was developed in Thai language by Singthong. With a total of 12 items and a 5-point rating scale ranging from 1 (never) to 5 (every), the total score of this subscale ranges from 12 to 60 points. Higher scores indicate a higher degree of problem-focused coping. A high internal consistency reliability was found in our study (Cronbach’s alpha coefficient of 0.84).

The fifth section contained the Self-Concept Scale which was developed in Thai language by Subprawong. The 25 items measure 5 dimensions of self-concept including physical appearance, scholastic competence, athletic competence, peer acceptance, and conduct/morality. The total scores ranged from 25 to 125 with a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) and reverse scores of negative items. The higher score indicates higher level of self-concept. Internal consistency reliability was found to be acceptable in this study (Cronbach’s alpha coefficient of 0.79).

The last section contained the Classroom Engagement Inventory (CEI) which was developed in English by Wang and colleagues. The researcher obtained the permission to use and translate into Thai from the tool’s developer. With 24 items, the scale evaluates 5 factors including affective engagement, behavioral engagement–compliance, behavioral engagement–effortful class, cognitive engagement, and disengagement. The total scores ranged from 24 to 120 points with a 5-point rating scale ranging from 1 (never) to 5 (each day of class) and reverse scores of negative items. The higher scores indicate higher level of engagement. A high internal consistency reliability was found in this study (Cronbach’s alpha coefficient of 0.90).

Translation process

Research instruments in English versions (the SCS-R and the CEI) were translated into Thai by using a back-translation technique by two bilingual translators who were Thai native speakers from the Faculty of Nursing. Each translated Thai version was blind back-translated independently to English by two translators of the Language Institute, Burapha University. These two translators had not seen the original English
version. Finally, the researchers who are bilingual, native Thai speaking and knowledgeable about early adolescents compared the original and back-translated English versions for its cultural acceptability, grammatical consistency, and structure of each of all individual items.

Data collection procedure

Once the study protocol was approved by the institutional review board, data collection was carried out from September to October 2019. The permission for study conduct was obtained from the Department of Children and Youth. For each home for children, the researcher approached the director for the survey. The director of the home for children facilitated the informed consent and assent agreement as described previously. The participant recruitment process was carried out with the help of the director. Participants were placed in a classroom to complete the self-administered questionnaire. For participants who could not read or write, the researcher read the question and wrote the answer for them. The survey took about 30 – 45 minutes to complete.

Data analysis

Demographic characteristics and scores of study psychosocial variables were reported using descriptive statistics including frequency with percentage and mean with standard deviation. Since this study aimed to examine direct effects of independent variables on resilience, i.e., no modifying effects of any of these independent variables, stepwise multiple regression analysis was used. All assumptions underlying multiple regression including missing data, normality, outliers, linearity, and multicollinearity were tested and met.24 Statistical significance was set at a type I error of 5%. Data were analyzed using SPSS version 26 statistical software.

Results

Of the total of 240 participants required, only 219 were successfully recruited. However, data of 3 of 219 participants were missing more than 10% 17 therefore these 3 participants were excluded resulting in a total of 216 participants for data analysis. Of the 216 participants for analysis, their age ranged from 10 - 14 years with a mean of 12.44 (SD = 1.31) (Table 1). About half of them were boys (50.9%). Most of them (93.9%) were studying and 56.9% were in primary school level. Their GPA ranged from 1.00 - 4.00 with a mean of 3.01 (SD = 0.62).

Table 1 Descriptive statistics of the participants (N = 216).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), M =12.44, SD =1.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>18</td>
<td>8.3</td>
</tr>
<tr>
<td>11</td>
<td>39</td>
<td>18.1</td>
</tr>
<tr>
<td>12</td>
<td>52</td>
<td>24.1</td>
</tr>
<tr>
<td>13</td>
<td>45</td>
<td>19.9</td>
</tr>
<tr>
<td>14</td>
<td>64</td>
<td>29.6</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girl</td>
<td>106</td>
<td>49.1</td>
</tr>
<tr>
<td>Boy</td>
<td>110</td>
<td>50.9</td>
</tr>
<tr>
<td>Education level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently studying</td>
<td>203</td>
<td>93.9</td>
</tr>
<tr>
<td>Primary school (Grade 4 - 6)</td>
<td>123</td>
<td>56.9</td>
</tr>
<tr>
<td>Lower secondary school (Grade 1 - 3)</td>
<td>73</td>
<td>33.8</td>
</tr>
<tr>
<td>Others (Non-formal education)</td>
<td>7</td>
<td>3.20</td>
</tr>
<tr>
<td>Leaving studying</td>
<td>13</td>
<td>6.1</td>
</tr>
<tr>
<td>GPA (for those currently studying) M = 3.01, SD = 0.62, range = 1.00 - 4.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results revealed that a total score of resilience of these 216 participants ranged from 52 to 94 with a mean of 76.19 points (SD = 7.37). With the range of score of 76 – 100 points for high resilience level15, this mean score indicated that the participants had resilience at the beginning of the high level (possible range of 25 – 100 points).

Stepwise multiple regression analysis revealed that two predictors were significantly associated with resilience (Table 2). The best predictor was problem-focused coping ($\beta = 0.447, P$-value < 0.001), followed by social connectedness ($\beta = 0.129, P$-value < 0.05). However, self-concept, and school engagement were not significantly associated with resilience. Social connectedness and problem-focused coping were together accounted for 24.6% of variance of resilience (adjusted $R^{2} = 0.239, F_{1,213} = 4.370, P$-value < 0.05).

Table 2 Predictors of resilience based on multiple regression (N = 216).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>S.E.</th>
<th>$\beta$</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>55.312</td>
<td>3.247</td>
<td>1</td>
<td>17.0351</td>
</tr>
<tr>
<td>Problem-focused coping</td>
<td>.390</td>
<td>.054</td>
<td>.447</td>
<td>7.2653</td>
</tr>
<tr>
<td>Social connectedness</td>
<td>.081</td>
<td>.039</td>
<td>.129</td>
<td>2.0960</td>
</tr>
</tbody>
</table>

*R² = 0.246, adjusted $R^{2} = 0.239, F_{1,213} = 4.370, P$-value < 0.05.

Discussions and Conclusion

The results showed that early adolescents living in homes for children had resilience at the beginning of the high level. Base on the Youth Resilience Framework, individual and
sociocultural risk factors and protective resources can influence health outcomes throughout adolescence. Social connectedness, problem-focused coping, self-concept, and school engagement were identified as protective resources. In this study, almost all of participants living in homes for children were currently studying (94.06 %). As a result, school engagement and social connectedness could be related to an increased resilience. Early adolescents living in homes for children have guardians to support all necessities for life, including education, training, medical aid, arranged services, consultation and assistance to guardians. A borderline high level of resilience could indicate that the participants faced multiple risk factors. According to Foster Club of former foster youth, it was found that half the respondents reported being bullied because they were in foster care, and foster youth who were victimized reported feeling afraid, angry, sad, or depressed, or a combination of these emotions. Homeless adolescents with a lack of resilience were significantly more likely to face hopelessness, loneliness, life-threatening behaviors, and lack of connectedness.

Early adolescents who had high problem-focused coping were more likely to have high resilience. Base on the Youth Resilience Framework, coping has been identified as a protective resource involving thoughts and actions directed toward solving problems. Ferguson and colleagues studied gender, coping strategies, homelessness stressors and income generation among homeless young adults in three cities. The findings revealed coping strategies, such as problem-focused coping, function as protective factors buffering youth from the effects of well-established risk factors among homeless young people (e.g., criminal behavior, transience, mental illness and substance use). In Thailand, Kummabutr et al. studied promoting coping skill in school-age children. Their result showed that coping skill was significantly higher in children participating the parent-plus-child resilience training and the child resilience training conditions than in the control group. They concluded that coping skill was positively associated with resilience among adolescents.

Early adolescents who had better social connectedness were more likely to have high resilience. Based on the Youth Resilience Framework, connectedness has been identified as protective resources that alleviate the effects of extreme risk conditions and adolescents with strong connectedness in fewer health-risk behaviors. Henderson and Greene employed an explanatory sequential mixed methods design to examine resilience, social connectedness, and re-suspension rates among youth in a community-based alternative-to-suspension program. Their findings demonstrated a significant program effect in resilience and social connectedness. Moreover, Capanna et al studied social connectedness as resource of resilience and found that the highest correlations emerged with the social and individual competence resiliency dimensions. Community resilience was defined as the ability of communities to withstand and mitigate the stress of a disaster. It entails the ongoing and developing capacity of the community to account for its vulnerabilities and develop capabilities in preventing, recovering, and using knowledge.

In conclusion, resilience was significantly predicted by social connectedness and problem-focused coping. Health professionals who are responsible for adolescent health should plan or develop intervention targeting this group focusing on enhancing and strengthening social connectedness and problem-focused coping for them. Nurses should guide and teach school health teachers and guardians to enhance resilience in early adolescents living in homes for children through increasing problem-focused coping, self-concept, and school engagement.

This study had certain limitations. A sample was drawn from one region of Thailand. Thus, generalizability to other setting and cultures in different regions may be limited. Effects of education could be varied since some homes manage to provide education in house while others sent the children to school outside. The measures based on SES-R and CEI could be not highly reliable since there were translated into Thai language in this study. More psychometric properties’ tests are needed. We also recommended that a longitudinal design and more settings and cultures should be carried out for further understanding early adolescents living in homes for children. Moreover, experimental interventions are needed to target at enhancing problem-focused coping, self-concept, school engagement and social connectedness to ultimately improve resilience.

Acknowledgement

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References