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Development of A New School-based Targeted Intervention to Mitigate Depressive Symptoms for Vietnamese Adolescents Following the Medical Research Council Framework

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Abstract

Adolescent depression is widespread and negatively impacts overall health and academic achievement. Preventive interventions, particularly in school settings, are ideal for building emotional resilience while minimizing stigma. Due to the shortage of adolescent mental health interventions in Vietnam, we aimed to address this critical gap by developing a new school-based targeted intervention to mitigate depressive symptoms for Vietnamese adolescents. This study was conducted in Can Tho City, Vietnam, following the Medical Research Council (MRC) framework for developing interventions. This new targeted intervention was developed based on the results of a comprehensive survey, two evidence-based practices (cognitive behavioral therapy (CBT) and interpersonal therapy (IPT)), and collaboration with mental health experts. The program consists of 12 weekly sessions (60 to 90 minutes each) and teaches essential techniques (e.g., psychoeducation, cognitive restructuring, time management, healthy habits, coping skills, and building relationships). This new targeted intervention is promising in helping Vietnamese adolescents lower their depressive symptoms and improve their emotional resilience.

Introduction

Depression has been one of the most prevalent mental health conditions among adolescents aged 15–19, affecting approximately one in seven teenagers worldwide [1–3]. This condition is often undiagnosed during adolescence, and the consequences of untreated depression are profound [4]. Those outcomes include a higher risk of depressive episodes in adulthood [5, 6], impaired academic performance, social isolation, and increased likelihood of substance abuse, self-harm, and suicide [7, 8]. However, mental health services for adolescents in many developing countries, including Vietnam, remain limited, and stigma towards mental illness further discourages help-seeking behaviors [9, 10].

Vietnam's population was over 100 million in 2023 [11], with over 14 million adolescents [12]. Contributing factors include academic stressors [13], familial conditions [14], and digital media exposure [15], all of which play a crucial role in the development of depressive symptoms. Despite the increasing recognition of adolescent depression needs, structured and evidence-based preventive interventions remain scarce in Vietnam's school system [16, 17]. Mental health support is often limited to general education, creating a critical gap in targeted interventions that address the psychological well-being of high school students.

In fact, adolescents spend much of their time in school; educational institutions provide an ideal setting for delivering preventive mental health programs. School-based interventions can promote resilience, equip students with coping skills, and reduce stigma by integrating psychoeducation into daily learning environments [18]. The latest study reported a 37.4% prevalence of depressive symptoms among adolescents in Can Tho City, Vietnam [19]. However, to our knowledge, no systematically developed school-based targeted interventions are tailored to specific cultural and educational contexts in Can Tho City, Vietnam.

To address this gap, we developed a school-based targeted intervention to mitigate depressive symptoms among high school students in Can Tho City, Vietnam. This program incorporates evidence-based psychological approaches, particularly Cognitive Behavioral Therapy (CBT) and Interpersonal Therapy (IPT), which have demonstrated effectiveness in adolescent mental health interventions [20]. This study also followed the Medical Research Council (MRC) framework for developing and evaluating complex interventions, ensuring a systematic approach to intervention design, implementation, and evaluation [21].

By developing a new school-based targeted intervention, this study aims to provide a well-structured, sustainable intervention that empowers adolescents with the skills to build emotional resilience and improve mental well-being. This study contributes to the growing field of adolescent mental health by offering a culturally adapted intervention that is informed by both empirical data and expert input to tackle the unique factors contributing to adolescent depression in low- and middle-income countries [18].

Methodology

Settings

This study was conducted in Can Tho City, a socio-economic and cultural center in the Mekong Delta region and one of Vietnam's five largest municipalities. Can Tho City consists of nine districts (five urban and four rural) with an estimated population of 1.4 million.

There are thirty-nine high schools in Can Tho City, comprising twenty-eight public and eleven private high schools. Among public high schools, there are twenty-seven general high schools and one specialized high school. Nine general high schools were randomly chosen from nine districts (one high school in one district) to join this study. However, one general high school declined to join, resulting in eight general high schools joining this study.

Research Design

This study followed the Medical Research Council (MRC) framework for developing and evaluating complex interventions [21]. A sequential multi-method approach was applied to systematically develop the school-based targeted intervention, ensuring its effectiveness and feasibility for implementation in Vietnamese high school contexts. The study design consisted of three key phases: 1) Cross-sectional survey: determine the prevalence and associated factors of depressive symptoms among high school students [19]; 2) Review and select appropriate evidence-based approaches: identifying and selecting effective adolescent depression interventions from previous studies in low- and middle-income countries [20, 22, 23]; 3) Intervention development: Data from the cross-sectional survey and information obtained from the review of evidence-based practices were used to develop a first draft of the new targeted intervention by the first author (TLCT). A panel of six professionals (SS, CR, SS, LTML, LĐAK, and NTT)

with experience developing and implementing preventive interventions carefully reviewed the structure and the contents of the first draft of the new targeted intervention.

Ethical Considerations

This study received ethical approval from Mahidol University (Certificate of Approval No. MU-CIRB 2024/153.0606), Can Tho University of Medicine and Pharmacy (No. 24.001/PCT-HDDD). Written informed consent was obtained from all participants and their guardians/families. Confidentiality was maintained throughout the study, and participation was voluntary, with the right to withdraw at any stage.

Result

Evidence-based Approaches

1054 eligible high school students aged 15–18 completed the questionnaires. The survey results indicated a high prevalence of Vietnamese adolescents with depressive symptoms (CESDR-V > 16 points) at 37.4%. Various factors contributing to depressive symptoms include cognitive distortions, academic pressure, substance abuse, family history of depression, negative family relationships, bullying, and cyberbullying. These results were published elsewhere [19].

The review identified psychotherapies as evidence-based interventions that improve depressive symptoms in adolescents [18, 20]. Cognitive Behavioral Theory highlights how an individual's beliefs about themselves and their surroundings influence their behavior and emotional states [24]. Interpersonal Therapy (IPT) is a short-term treatment initially described as an effective treatment for depression [25]. IPT addresses four main issues: grief, role disputes, role transitions, and interpersonal deficits [26]. It aims to improve patients' understanding of their own thinking and emotions, and those of others. Typically, it involves 16 sessions spread over five months [27, 28].

Develop the Adolescents Live Resilience Program (ALREP)

A new targeted intervention was developed based on the factors identified in the cross-sectional survey, experts' recommendations, and Cognitive Behavioral Therapy (CBT) and Interpersonal Therapy (IPT) approaches. This intervention includes 12 weekly sessions, separated into five modules: Module 1. Introduction and Psychoeducation; Module 2. Cognitive Behavioral Therapy (CBT); Module 3. Interpersonal Therapy (IPT); Module 4. Integrated Strategies (CBT + IPT); and Module 5. Closing.

ALREP has twelve sessions, each of which is structured in the same format: 1) a welcome and review of the previous part, 2) the main session's contents, and 3) homework and closing. Each session lasts 60 to 90 minutes. During the training, facilitators encourage high school students to share their thoughts and connect theory with real-life scenarios.

(Insert Table 1 here)

Discussion

The study primarily developed the ALREP program, a scientifically rigorous and contextually feasible intervention designed to mitigate depressive symptoms among high school students in Can Tho City. The program was developed based on the findings of a cross-sectional study of 1,000 high school students in Can Tho, which revealed a high prevalence of depressive symptoms (37.4%), alongside key risk factors [19]. Grounded in a systematic literature review and expert consultations in mental health, the intervention integrated two evidence-based psychotherapies, Cognitive Behavioral Therapy (CBT) and Interpersonal Psychotherapy (IPT), to ensure socio-cultural and economic appropriateness for the Vietnamese context. Designed in strict compliance with the Medical Research Council guidelines, the intervention comprises five modules spanning 12 sessions. These modules progress from cognitive restructuring and interpersonal relationship building to healthy lifestyle adjustments and skill acquisition, offering a sustainable framework for implementation within the Vietnamese school system.

The 37.4% prevalence of depressive symptoms among high school students in Can Tho City represents an alarming epidemiological indicator, underscoring the escalating trajectory of mental health disorders within the adolescent population. Although this figure reflects a slight decrease of 3.7% compared to 2013 data [13], it remains substantially higher than the national average for high school students [29] as well as global population estimates documented between 2001 and 2020 [30]. This heightened psychological burden may be largely attributable to Can Tho's rapid urbanization rate, which exceeds both national and Mekong Delta regional averages [31]. This ongoing urban transition inadvertently generates unique stressors, exposing adolescents to intense academic and examination pressure, dysfunctional or high-conflict family dynamics, and social isolation within peer networks [32]. Furthermore, the situation is worsened by critical gaps in school-based prevention systems; data from the Ministry of Health et al. [33] demonstrate that 62.2% of students have never received formal education on the warning signs of depression or suicidal behavior, 21.26% are unable to recognize or recall such information, and only a modest proportion (16.54%) has accessed official resources.

To systematically translate empirical risk factors into a feasible school-based prevention framework, the ALREP program was structured into a 12-session matrix grounded in the solid theoretical foundations of CBT [24] and IPT [25]. This continuum begins with Module 1, which aims to help students overcome personal barriers and stigma around open discussions of depression, reduce social stigma, and establish a foundation for Module 2 to operationalize core CBT cognitive restructuring components [34] to replace maladaptive thought patterns. To address contextual stressors, such as experiences of domestic violence, Module 3 draws upon Interpersonal Psychotherapy (IPT) to foster healthy interpersonal dynamics, enabling adolescents to transition from passive withdrawal to assertive communication and effective boundary setting [35]. Concurrently, Module 4 integrates both theoretical frameworks to dynamically mitigate behavioral and environmental triggers, equipping students with academic stress management strategies [36], substance refusal skills [37], and healthy digital boundary establishment [38] against the risk of cyberbullying. This comprehensive intervention sequence culminates in Module 5, which focuses on self-empowerment by helping students stabilize their

biological lifestyle habits through physical activity and independently design a personalized "Long-Term Mental Health Maintenance Plan".

The core foundation underlying the ALREP intervention's effectiveness rests upon a deliberate, dual integration targeting both the intrapsychic dimension and the interpersonal dynamics of adolescents presenting with depressive symptoms. Adolescents exhibiting depressive symptoms often display both unrealistic negative cognitions and relational difficulties within their personal and family interactions [39]. Consequently, combining Cognitive Behavioral Therapy (CBT) and Interpersonal Psychotherapy (IPT) offers a dual action that affects both dimensions and maximizes therapeutic outcomes [40, 41]. Specifically, while the CBT component equips high school students with cognitive restructuring skills to modify negative cognitive distortions and regulate stress through structured practice exercises [42–44], the IPT modules concurrently help adolescents reshape their external relational environment, thereby mitigating stressors arising from family conflict and peer violence [35, 45, 46].

Furthermore, the cross-cultural transportability of Western evidence-based psychotherapies, such as CBT and IPT, requires careful consideration for Vietnam's unique socio-cultural context. In Vietnam, deeply ingrained collectivistic values and the cultural emphasis on the "family's face" inadvertently worsen public stigma, often leading mental health conditions to be mislabeled as personal failures or familial burdens [47]. To overcome these relational barriers, ALREP's initial psychoeducational phase (Sessions 1 and 2) normalizes and reframes depression as a manageable health condition, fostering a psychologically safe space for students to express emotions without fear of judgment (Table 1). Beyond societal stigma, Vietnamese high school students bear an immense academic burden stemming from high-stakes examinations and elevated family expectations [48]. Accordingly, the program not only facilitates cognitive restructuring and builds supportive interpersonal networks around students, but also integrates the Eisenhower Matrix in Session 7 to equip them with effective time-management strategies (Table 1). Such culturally sensitive adaptations ensure that ALREP achieves both clinical fidelity and high acceptability within the Vietnamese educational landscape.

Feasibility and sustainability

To demonstrate its real-world applicability rather than remain a theoretical model, the ALREP program was structurally embedded in the routines, school culture, and academic schedules of Vietnamese high schools with institutional support [22]. The 12-session structure (60–90 minutes per session), equivalent to two consecutive class periods in Vietnamese high schools, ensures familiarity and seamless integration for students. Notably, a pragmatic digital delivery approach, utilizing secure Google Drive links to distribute PowerPoint materials via Zalo, the second most popular social media platform in Vietnam with a 55.6% reach among youth under 18 [49], at least 24 hours prior to sessions, minimizes logistical barriers and enhances sustained student engagement. This intervention strategy aligns with global trends where face-to-face and internet-based CBT (iCBT) show comparable efficacy in reducing adolescent depressive symptoms while offering cost savings, reducing stigma, and enabling scalable reach [42], alongside the growing adoption of online IPT [35]. Crucially, ALREP's long-term sustainability

hinges on a highly scalable task-shifting model that empowers trained, closely supervised high school teachers to act as lay providers under the systematic supervision of a psychologist and the principal investigator [22]. By addressing the acute shortage of school-based mental health professionals nationwide [50, 51], this low-resource operational framework ensures high structural feasibility [22] and offers a replicable pathway for sustainable school-based mental health prevention.

Compare to programs

Within Southeast Asia, the BAND program in Thailand [52] represents a notable intervention model targeting depressive symptoms among secondary school students. Although both programs are grounded in empirical epidemiological evidence and utilize Cognitive Behavioral Therapy (CBT), they diverge significantly in theoretical framework and scope of intervention. BAND integrates the Theory of Human Relatedness to foster a sense of belonging through cognitive re-appraisals, constructive communication, and thought-stopping techniques. In contrast, ALREP combines CBT with Interpersonal Psychotherapy (IPT), focusing on resolving interpersonal conflicts and establishing a sustainable social support network. Furthermore, ALREP extends its multidimensional scope into behavioral and lifestyle interventions, specifically addressing substance use management (Session 8), healthy social media use (Session 9), and the promotion of physical activity (Session 11). Operationally, BAND requires dividing students into small groups of 15, convening twice weekly over 7 weeks, led directly by researchers in school classrooms. Conversely, ALREP accommodates larger class sizes through digital support and empowers schoolteachers to facilitate sessions under professional supervision. In Vietnam, La et al. [53] culturally adapted the Australian Resource Adolescent Program (RAP-A) into "Ngoi nha Hanh phuc" (Happy House). Despite shared features, such as the integration of CBT and IPT, 90-minute session durations, and teacher-led delivery strategies, ALREP and RAP-A reflect fundamentally different intervention approaches. While the adapted RAP-A functions as a universal prevention program adapted from an existing framework, ALREP is a new targeted intervention developed from local empirical data, focusing specifically on symptom reduction in high-risk adolescents.

Strengths and limitations

This study showcases significant strengths in both methodological rigor and practical school-based applicability. Adopting a sequential methods design, the research strictly adhered to the Medical Research Council (MRC) framework for complex interventions [21], combining a cross-sectional study to assess baseline prevalence [19] with a systematic review to identify evidence-based approaches, thereby enhancing feasibility for mitigating adolescent depressive symptoms. Notably, ALREP stands as the first school-based psychological intervention tailored specifically for Vietnamese adolescents, addressing the critical scarcity of clinically standardized models in low- and middle-income countries (LMICs) [18]. A major highlight of the program lies in its deliberate integration of CBT and IPT, guided by principles of cultural adaptation [54, 55] to overcome deep-seated psychological barriers, most notably the cultural tendency toward face-saving [47, 56] and the distinct academic pressure experienced by local students [56, 57].

Nevertheless, several limitations of this study warrant consideration. First, the project ends at the development and expert consensus phase and lacks empirical evaluation through a randomized controlled trial (RCT) to confirm its real-world efficacy among students. Second, because data collection was geographically confined to Can Tho City, the findings may have limited generalizability to adolescents in other regions of Vietnam, such as northern mountainous or rural areas. Third, the intervention protocol is primarily tailored for individuals presenting with mild-to-moderate depressive symptoms. Finally, the digital delivery component poses practical challenges, as students may lack intrinsic motivation to complete self-guided modules without direct supervision, and the model relies on stable internet connectivity, a requirement that presents a substantial barrier in socioeconomically disadvantaged communities.

Implication for future research and practice

Based on the outcomes of this development phase, the next imperative step is to conduct a small-scale pilot study or a randomized controlled trial (RCT) to evaluate the feasibility and clinical efficacy of ALREP in school settings, in line with subsequent phases of the Medical Research Council framework [21]. From policy and practical perspectives, this study recommends that the Ministry of Education and Training, in collaboration with health authorities, consider wide-scale integration of ALREP materials as supplementary educational resources to establish a standardized school-based depression prevention model [58, 59]. Such an institutional shift would replace generic psychoeducational activities with a structured, proactive intervention framework [60], ensuring sustainable adolescent mental health protection across Vietnam.

Conclusion

Adolescent depression is a crucial global issue that is underserved in low- and middle-income countries. Psychological interventions, such as cognitive behavioral therapy and Interpersonal psychotherapy, have been demonstrated to be effective in developed countries. The application of these evidence-based approaches to culturally designed interventions for developing contexts still remains scarce. The existing study provides a well-structured, tailored intervention that promises to reduce the burden of adolescent depression in developing countries, especially in Vietnam. Future studies should aim to generalize this ALREP for not only Vietnam but also other similar contexts.

Declarations

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Conflicts of interests

The authors declare no conflicts of interest.

Ethics approval

This study received ethical approval from Mahidol University (Certificate of Approval No. MU-CIRB 2024/153.0606), Can Tho University of Medicine and Pharmacy (No. 24.001/PCT-HDDD), and the Can Tho Department of Education and Training (No. 1518/SGDDT-CTTT) for collecting data.

Data Availability Statement

The data can be made available via email upon reasonable request from the corresponding author.

Consent for publication

Not Applicable.

Authors' contributions

T.L.C.T: conceptualisation, methodology, data curation, formal analysis, investigation, manuscript writing (original draft); **N.M.T.:** data curation, formal analysis, investigation, manuscript writing (original draft); **T.T.S.:** conceptualisation, investigation, methodology, supervision; **O.L.:** conceptualisation, investigation, methodology, supervision; **N.M.P.:** formal analysis, investigation, validation, visualisation, manuscript writing (review & editing); **N.T.D.:** validation, visualisation, manuscript writing (review & editing); **D.T.T.V.:** validation, manuscript writing (review & editing); **C.R.:** conceptualisation, investigation, methodology, project administration, supervision, manuscript writing (original draft, review & editing).

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Table 1

Table 1 is available in the Supplementary Files section.

Supplementary Files

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- Table1.docx