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Exploring Mental Health Services for Youth Experiencing Homelessness in East Asia Pacific Regions: A Systematic Scoping Review

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Abstract: Background: Youth experiencing homelessness (YEH) in East Asia Pacific (EAP) represent one of the most at-risk populations due to cultural and geographical factors. Effective mental health interventions, primarily researched in Western contexts, may not fully apply to YEH in EAP. Their lack of stable shelter, disrupted social networks, and limited access to mental health services elevate their susceptibility to adverse mental health, making urgent interventions essential to address their needs. **Objective:** To explore and provide systematic evidence on the types of mental health services and interventions for YEH in EAP and their impact on overall quality of life and wellbeing. **Methods:** Electronic databases(e.g., Medline, PsychInfo, PubMed, Scopus) were systematically searched(publication dates between 01/01/1990-13/05/2023), as well as additional online resources specific to homelessness. Articles were screened, and a critical appraisal assessed the quality of the included studies. **Results:** Eight studies with different interventions were identified in Indonesia(n = 2), Malaysia(n = 1), South Korea(n = 3), and The Philippines(n = 1). These were thematically clustered into six categories: art, cognitive behavioural therapy, life skills education, resilience enhancement, family strengthening and government interventions/services. **Conclusion:** This review highlights effective mental health interventions' positive impact on YEH mental health outcomes and quality of life in EAP, stressing the urgent need to implement socio-culturally sensitive services. Future research should address knowledge gaps through comprehensive studies covering diverse EAP regions and populations, prioritising socio-culturally specific psychological measures.

Keywords: youth experiencing homelessness; East Asia Pacific; mental health interventions; Cognitive Behavioural Therapy; inclusion health; resilience enhancement; life skills education; government programs; emotional health

1. Introduction

Background

Youth experiencing homelessness (YEH) is a serious global public health concern—they represent one of the most at-risk populations in many countries worldwide.[1] Globally, 1.6 billion people are estimated to experience some form of inadequate housing[2]; however, the true prevalence of homelessness is unknown.[3] In East Asia Pacific (EAP) regions, youth homelessness demands urgent attention. Although there is not a single unifying cause found to elucidate routes that lead youth into homelessness, poverty plays a significant role in exacerbating homelessness in EAP regions.[4,5] EAP suffers the most significant damage caused by natural hazards (e.g., earthquakes, tsunamis, tropical cyclones/typhoons)[6] that are often neglected by the state during recovery and rebuilding periods .[7] As such, economic inequality has been shown to exacerbate stress within families, which can manifest negative outcomes; these include selling or abandoning their children[5,8] or family dysfunction such as domestic violence and abuse which are considered major forces that push children and young people (CYP) to self-migrate, leave home, or run away,[9,10] and therefore, often left to fend for themselves.

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YEH are at high risk for various adverse mental health outcomes.[1] They experience abuse and neglect, both prior to leaving home and while living on the streets (i.e., rough sleeping), that often lead to significant, long-lasting trauma.[11] For instance, high rates of depression, post-traumatic stress disorder (PTSD), substance abuse, suicidal ideation and bipolar disorder have been reported among YEH.[12,13] YEH are faced with multiple daily stressors associated with street life and often demonstrate a lack of coping strategies, resilience and essential social skills needed to sustain social support.[14–18] Therefore, they are likely to resort to maladaptive coping strategies[19] and decreased quality of life compared with the general population.[20] Notably, suicidality is the leading cause of death among YEH[21] and high rates of suicide attempts have been reported among this population (80%).[22] Furthermore, previous research documented that YEH were highly susceptible to becoming targets of sexual exploitation and prostitution,[23] even among sheltered youth.[24] While the mentioned studies were valuable in shedding light on the risks associated with YEH, they were all conducted in Western countries. This observation underscores a gap in the existing literature, which could potentially leave an incomplete understanding of the broader issue of homelessness and its associated risks in other parts of the world.

Problems of defining *'homelessness'*

Defining 'homelessness' is complex: There is no internationally agreed definition as it plays out along a continuum.[1,3] Finding overall figures on YEH in EAP is extremely challenging given the different local and government definitions of homelessness from each country in this region, along with the absence of reliable data.[1,3] The most commonly used term to refer to YEH in academic literature and policymakers in EAP regions (e.g., China and Indonesia) is *'street children'*, defining those under age 18 years who live or work in public areas with little or no parental supervision.[25,26] *'Runaway youths'* is another term used mainly in Korean literature,[27,28] along with *'street sleeping'*, *'rough sleeping'* and *'pavement dwelling'* to describe primary homelessness.[29,30] CYP experiencing secondary homelessness, defined by their lack of stable long-term housing, frequent between temporary accommodation such as shelters, orphanages, and refugee camps.[3,30] *'Invisible homelessness'* is a phenomenon observed in many EAP countries, where young people couch-surf between friends' homes, 24-hour cafés or fast-food restaurants due to cultural norms and societal pressures,[31] making their housing instability less visible but equally pressing.

Different government definitions of homelessness vary across border lines. For example, in Singapore, 'homelessness' is defined as "*any person found begging in a public place in such a way as to cause or be likely to cause annoyance to persons frequenting the place or otherwise to create a nuisance*",*[32]* whereas in South Korea, it is defined as *"persons who have used/lived homeless facilities for a substantial period"*.[33] As highlighted by Rosenthal *et al.*(2021), the varying definitions of homelessness can have significant implications for the provision of mental health services depending on how it is recognised within a given jurisdiction,[34] and therefore, could act as a barrier to accessing mental health services. There is a lack of government policies that mention mental health services for this population based on those definitions[25] implying that mental health services are not adequately addressed by the government.

Challenges of YEH in EAP and rationale for the review

YEH in EAP are a distinct population and influenced by a combination of cultural, socio-economic, and contextual factors. While both the West and East grapple with the challenges of youth homelessness, the unique dynamics of the EAP region amplify the importance of research in this area. For instance, cultural norms and values, along with rapid urbanisation and migration might contribute to different pathways into homelessness.[3,5] Barriers to accessing mental health services may differ from Western countries. Some examples were, but not limited to, low perceived need,[35] rural and financial constraints,[36,37] and a lack of mental health professionals and resources, who only practice in urban areas.[38–40] These factors can reinforce stigmatisation and marginalisation in countries where there is a strong societal stigma and shame already attached to homelessness.[41,42] The associated risks and effective mental health interventions aforementioned for this population were experiences of YEH in Western countries with Western therapeutic systems. These experiences

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and risks may differ for Asian adolescents experiencing homelessness living in EAP, as an extensive body of literature places emphasis on the different perceptions of mental illness cross-culturally,[43–46] which then can in turn influence both their receptiveness and adherence to treatment plans. Understanding these cross-cultural differences is crucial for mental health professionals to provide effective and culturally sensitive care for YEH, as it involves adapting treatment strategies that align with cultural norms[47] in EAP. Although several studies have evaluated the effectiveness of interventions for this population,[48–50] there is a lack of understanding of the different mental health interventions and programs for youth homelessness in EAP regions. Most systematic reviews and previous studies have focused on interventions conducted primarily in Western countries.[51–53] Yet, to date, there is a lack of comprehensive overview of literature surrounding interventions and programs for youth homelessness in EAP alone.

To address the research gap in international literature, the primary objective of this review was to provide systematic evidence on the different types of mental health services and interventions for YEH in EAP and their impact on overall quality of life and wellbeing for YEH. Thus, a scoping review[54,55] was selected to help map out the existing literature on this topic by gaining a comprehensive understanding of the current state of such services and interventions for YEH in the region. This review can hopefully provide valuable insights for future research, policy formulation, and program development that is tailored to this distinct and at-risk population, in order to improve quality of life and positive health outcomes for YEH in EAP regions.

2. Methods

This review followed the Centre for Evidence-Based Management (CEBMa) for Critically Appraised Topics guidelines[54] and PRISMA Extension for Scoping Reviews checklist[55] (Appendix A) to ensure that the review process was conducted in a comprehensive manner and to minimise potential researcher bias.[56] The research question was formulated using the **PICO** (population, intervention, comparison, and outcome) framework.[57] Table 1 presents the full inclusion and exclusion criteria with definitions.

Table 1. Definitions, inclusion, and exclusion criteria.

	Inclusion criteria	Exclusion criteria
Population	▫ Studies should have explicitly targeted youth ages 12 to 18 who were experiencing homelessness, previously experienced homelessness or were currently residing in temporary shelters and orphanages. Although these ages were ideal, some room for margin could be adjusted if it met the rest of the inclusion criteria; or if the mean age was between the ages of 12 and 18. ▫ This review was not limited to the term "homeless", but "street children", "children of the street", "street youth", "runaway adolescents/youth" and "refugee children and youth" were also considered. ▫ Moving forward, in this review, *'homelessness'* was defined according to aforementioned terms*:* street children, runaway youths and adolescents residing in temporary shelters, and were used interchangeably. ▫ Studies must have been conducted in East Asia Pacific countries that were in accordance with The World Bank's list: Cambodia, China, Indonesia, Korea, Lao PDR, Malaysia, Mongolia, Myanmar, Papua New	▫ Adolescents not within the age range ▫ Adolescents who had not previously experienced/were not currently experiencing homelessness. ▫ Studies that were not conducted within the EAP region.

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	Guinea, Pacific Islands, Philippines, Singapore, Thailand, Timor-Leste, and Vietnam.[58,59]	
Intervention	▫ This review included any mental health intervention and programs that targeted the study population were eligible for inclusion in this review. Examples of mental health interventions are, but were not limited to, Cognitive Behavioural Therapy (CBT), family-based therapy and therapeutic support. See **Table 2** for a full list of search terms used for mental health interventions.	▫ Government policies/reports/services/programs that do not include mental health services and interventions.
Comparison	▫ No specific comparisons were made for this review.	
Outcome	▫ The primary outcome of this review was to explore different mental health interventions for YEH in EAP regions.	

Databases and search strategy

The following major electronic databases were searched for this review: Medline, PsychInfo, PubMed, Scopus, and Web of Science. Additional records were hand-searched through other sources, such as web-based publications and grey literature specific to homelessness, reference lists of included texts and related publications. These included Centre for Homelessness Impact (CHI)[60]: A non-profit organisation dedicated to providing evidence-based solutions and innovations with the goal of improving the outcomes of people experiencing homelessness. The search was conducted on 13th May 2023 and was limited and filtered to English records published between 1990 and 2023 in all databases. Table 2 presents an example of search terms used for Medline, with slight variations employed in each database. See Appendix B for full search terms used in all academic databases. A prior search was conducted across official government websites to compare different definitions of homelessness within EAP and to inform the search terms used (Table 2; Appendix B).

Table 2. Example search terms. Search terms used for Medline. .

Category	Search terms
YEH	((homeless* and (child* or youth* or adolescen* or teen* or young person* or young people*)) or street child* or street sleep* or "homeless* youth" or ill-housed person* or rough sleeper* or railway boy* or street dweller* or refugee*) (Homeless persons or Homelessness or Homeless family or Homeless Shelters or Homeless Youth or Homeless single person or "outreach to the homeless" or homeless mentally ill or homeless shelter resident or Homeless Health Concerns) (Runaways or Runaway children or Street Youth)
AND	
Mental health intervention	(mental health service* or therapeutic support* or counselling or counseling or housing program* or temporary shelter* or homeless shelter* or psychological counseling or psychological counselling or short-term temporary care or short-term care or youth homeless* shelter or non government* organisation* or non government* organization* or non-government* organisation* or non-government* organization* or NGO* or mental health care or mental health support* or cognitive behavioural therap* or cognitive behavioral therap* or CBT* or substance abuse therap* or outreach program* or outreach support* or mental health intervention* or mental health* or life counseling or life

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	counselling or overcrowded or refugee* or emergency accommodation* or homeless* facilit* or rehabilitation* or prevention approach* or social work* or therap*) Mental Health Services/ or Child Guidance/ or Community Mental Health Services/ or Counseling/ or Emergency Services, Psychiatric/ or Social Work, Psychiatric/ (health service, mental or health services, mental or hygiene service, mental or hygiene services, mental or mental health service or mental health services or mental hygiene service or mental hygiene services or service, mental health or service, mental hygiene or services, mental health or services, mental hygiene)
AND	
EAP countries	(east asia* pacific or east asia* pacific countr* or cambodia* or china or chinese* or hong kong or indonesia* or japan* or south korea* or lao* pdr or macau or macanese or malaysia* or mongolia* or myanmar or pacific island* or papua new guinea or papuans or philippin* or filipin* or the philippine* or singapore* or taiwan* or thai or timor-leste or vietnam*) exp Cambodia/ or exp Indochina/ or exp Indonesia/ or exp Laos/ or exp Malaysia/ or exp Myanmar/ or exp Philippines/ or exp Singapore/ or exp Thailand/ or exp Timor-Leste/ or exp Vietnam/ or exp China/ or exp Japan/ or exp Korea/ or exp Mongolia/ or exp Taiwan/ or exp Indonesia/ or exp Japan/ or exp Macau/ or exp Philippines/ or exp Taiwan/

Screening process

Results were imported into EndNote 2.0 for screening and deduplication. An initial title and abstract screening was conducted. Full-text articles were then read and thoroughly evaluated to determine eligibility for inclusion in the systematic scoping review. Studies meeting the inclusion criteria were selected, and subsequent data extraction was carried out. Any conflicts were discussed between co-authors KCE and DMR until a consensus was reached. This is demonstrated in the PRISMA Flow diagram[61] in Figure 1.

Analysis

A study quality assessment was performed using The Critical Appraisal Skills Programme (CASP) checklists[62–65] (see Appendix C for the CASP checklist that was matched and employed for each selected text and its study design). Each selected study was evaluated to assess its methodological robustness, validity, and relevance to the research question. Applicability to clinical practice and ability to generalise results were also assessed, which was crucial for this review. This ensured that the evaluated interventions and programs were relevant for addressing specific mental health needs of YEH. CASP[62–65] aims to inform evidence-based practice as generalisability helps identify interventions that have demonstrated its effectiveness across diverse settings for the target population.[66] Lastly, interventions/programs in the results were thematically grouped based on the type of interventions they encompassed.

3. Results

Study selection

A total of 3,543 publications were identified from the literature search across all databases and through hand searching additional resources, which represented 3,467 publications after duplicates were removed and screened for eligibility. After the selection process, a total of eight studies published between 2000-2023 met the inclusion criteria and were included in this review. Figure 1 is the PRISMA Flow diagram[61] showing individual database numbers and articles retrieved.

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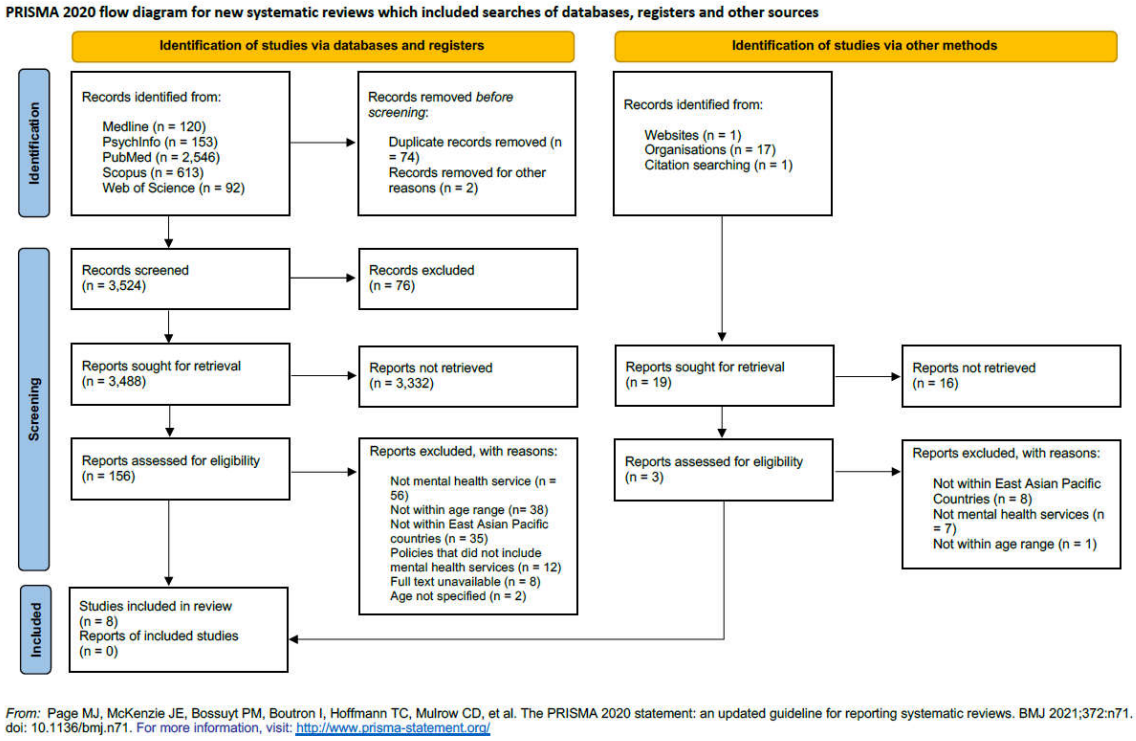

Figure 1.

Study characteristics

All included articles were conducted within the EAP region: Indonesia (*n* = 2),[67,68] Malaysia (*n* = 1),[69] South Korea (*n* = 3)[27,70,71], and The Philippines (*n* = 1).[72] The location of one study (*n* = 1) was withheld for confidentiality reasons, but, it was conducted in Southeast Asia[73] e.g., Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, and Vietnam,[74,75] indicating it still fit the inclusion criteria. Outreach settings for YEH primarily consisted of participants residing in orphanages (*n* = 8), shelters (*n* = 8), centres (*n* = 4), and children residing on the street (*n* = 2).

Participant characteristics

The age range of the participants varied across the studies, with the majority falling between the inclusion criteria age 12 to 18 yrs. (*n* = 4).[27,69,71],[72] However, a case study included participants as young as seven yrs. old,[67] with the oldest participants in another study being 21.[70] Both male and female participants were included in the studies; some studies focused exclusively on one gender to examine gender-specific effects of interventions for YEH[27,70] while others had a balanced representation of both genders.[69] A summary of the study and participant characteristics is reflected in Table 3. As the selected studies were conducted within the EAP regions, the studies encompassed a diverse range of participant ethnic and religious backgrounds, such as Christianity and Islam. In the Malaysian study,[69] there were different ethnicities included as participants, although they only reflected a small percentage. For example, a large percentage of participants in this study were of Malay ethnicity (67.5%), followed by Indian (21.8%), Chinese (4.8%), and Indonesian and Orang Asli [indigenous] (5.9%). Lastly, a large majority of participants across all eight studies belonged to families of low socioeconomic position (SEP).

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Table 3. Summary of study characteristics.

Author(s) & Year	Title	Country of Study	Design	Outreach Setting	Sample Size *n*	Age Range in Years	Gender
Brillantes-Evangelista (2013)[72]	An evaluation of visual arts and poetry as therapeutic interventions with abused adolescents	The Philippines	Quasi-experimental and qualitative methodologies	5 shelters around Metro Manila	33	13 to 18	21 females; 12 males
Hyun *et al.* (2005)[27]	The effect of Cognitive-Behavioural group Therapy on the self-esteem, depression, and self-efficacy of runaway adolescents in a shelter in South Korea	South Korea	RCT	1 shelter in Seoul	27	Mean age 15.5	27 males
Miles (2000)[73]	Drawing together hope: 'listening' to militarised children	SE Asia*	Quasi-experimental	2 centres	60	9 to 16	52 males; 8 females
Mohammadzadeh *et al.* (2019)[69]	Improving emotional health and self-esteem of Malaysian adolescents living in orphanages through the Life Skills Education program: A multi-centred randomised control trial	Malaysia	Parallel single-blind (subject-masked) RCT	8 orphanages in Klang valley	271	12 to 18 (Mean age 14.47)	149 males; 122 females
Noh (2018)[70]	The Effect of a Resilience Enhancement Program for female runaway youths: A quasi-experimental study	South Korea	Quasi-experimental	5 shelters	32	12 to 21 (Mean age 16.69)	Females
Noh & Choi (2020)[71]**	Development of the Family-Based Mental Health Program for runaway adolescents using an intervention mapping protocol	South Korea	RCT	2 youth centres	N/A	Targets 12 to 18**	N/A
Sarmini & Sukartiningsih (2018)[67]	From road to the arena: The role of Kampung Anak Negeri for street children	Indonesia	Case study	Kampung Anak Negeri (KAN)	N/S	7 to 18	N/S
Solong *et al.* (2023)[68]	Street child management policy at social office of Makassar City, Indonesia	Indonesia	Qualitative	Social services, street	7***	N/S	N/S

Study designs

Of the eight studies, three involved some type of randomised-control trial (RCT) study design. One of these included a parallel single-blind (subject-masked) RCT[69]; one study had randomly assigned participants to either a control group or intervention group[27]; the other study was a development of an intervention program for YEH, with the aims of using an RCT to evaluate its effectiveness of the developed program.[71] Four studies used quasi-experimental and qualitative designs,[68,70,72,73] and the remaining one was a case study[67] (Table 3). Each selected study was subjected to quality checks using the CASP checklists[62–65] matched by study design (see Appendix C).

Outcome measures

A structured overview of measures and outcomes for each selected study is displayed in Table 4. Evidently, a range of outcome measures were utilised to evaluate various aspects of mental wellbeing and health status of YEH. For example, depression was measured with different scales across the studies: Brillantes-Evangelista[72] used the Self-Rating Depression Scale (SDS),[76,77] while Hyun *et al.*[27] and Mohammadzadeh *et al.*[69] used alternative scales to measure depression

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(Beck Depression Inventory [BDI] and Depression, Anxiety and Stress Scales [DASS-21]; respectively).[78,79] For specific outcome measures, the choice of instruments varied across studies which were *usually* translated into the country's main language (Filipino, Malay, or Korean).

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Table 4. Mental health services/programs and outcomes for youth experiencing homelessness.

Author(s)	Intervention/Program	Control	Instruments/Measure & Statistical Analysis	Outcome
Brillantes-Evangelista[72]	Art psychotherapy Poetry psychotherapy	**(1)** Visual arts group (n = 11) **(2)** Poetry group (n = 11) **(3)** Control group (n = 11)	▫ Self-Rating Depression Scale (SDS).[76,77] ▫ Child Report on Posttraumatic Symptoms (CROPS).[76,80] ▫ These were translated to Filipino and back translated to English. SDS and CROPS were administered pre- and post-test. Mid-assessment was employed to detect changes in score. ▫ Repeated measures t-test was conducted to determine significant differences between pre-test, mid-test (for the intervention groups only) and post-test scores for all 3 groups. ▫ Participants' experiences were examined by looking at their behaviours, artwork, and interview responses throughout the intervention period. These were subject to content analysis.	*Statistical outcomes for PTSD symptoms* ▫ Downward trend on PTSD symptomology pre- and post-test CROPS scores for visual arts (27.72, 23.90; respectively) and poetry group (27.36; 24.27) compared with control (29.27; 30.71). ▫ Significant decrease of mean CROPS repeated measure t-test scores from pre-test to post-test for visual arts group (t (10) = 2.702, p = .011**, r = .6496) which was also evident mid-test (t (10) = 2.044, p = .034*, r = .2947). ▫ General decrease of CROPS scores for poetry group pre-test and post-test (t (10) = 1.731, p = .057), with slight increase from pre- to- mid-test (t (10) = -.051, p = .48). ▫ Significant decrease of mean scores from pre-test to post-test on CROPS with moderate effect size (t (10) = 2.232, p = .025, r = .5761). *Statistical outcomes for depression symptoms* ▫ Decreases of pre-test and post-test scores for all groups, with the poetry group having the largest decrease of scores (43.636, 39.909; respectively), followed by visual arts (43.545; 40.545) and the control group (44.354; 42.857). ▫ Significant decrease of mean SDS repeated measures t-test scores from pre-test to post-test for poetry group with moderate effect size (t (10) = 1.880, p = .0445*, r = .512). ▫ No significant difference between pre-test, mid-test, and post-test mean scores in the visual arts and control group. *p < .05. ** p < <.01.
Hyun *et al.*[27]	Cognitive Behavioural Therapy	**(1)** Experimental group (n = 14) **(2)** Control group (n = 13)	▫ Self-esteem Inventory[81] translated into Korean.[82] ▫ Beck Depression Inventory (BDI)[78] translated into Korean.[83] ▫ Self-efficacy Scale[84] translated into Korean[85] was employed pre- and post-test.	No significant differences in homogeneity in the levels of self-esteem, depression, and self-efficacy between the experimental group and control group. *Statistical outcomes for the effect of CBT after intervention* *Self-efficacy* ▫ Self-efficacy scores increased pre-test (M = 53.86, SD = 7.65) to post-test (M = 60.29, SD = 8.08) for experimental group (z = -2.098, p = .36).

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			▫ Fisher's Exact probability and the Mann-Whitney *U* test were used to test the homogeneity between the experimental group and the control group in terms of demographics and baseline values (self-esteem, depression, self-efficacy). ▫ Wilcoxon signed rank test was used to examine the effects of CBT on self-esteem, depression, and self-efficacy.	▫ No significant changes for pre-test scores $M = 45.15$, $SD = 10.57$) to post-test ($M = 47.15$, $SD = 9.47$) for control ($z = -.969$, $p = .333$). *Depression* ▫ Significant decrease of depression pre-test scores ($M = 15.43$, $SD = 8.42$) to post-test scores ($M = 9.64$, $SD = 8.76$) for experimental group ($z = -2.325$, $p = .020$). ▫ Depression occurred after the intervention period ($M = 15.08$ ($SD = 6.60$); $M = 17.46$ ($SD = 12.57$)) for control group ($z = -.420$, $p = .674$). *Self-esteem* ▫ No significant differences in self-esteem scores pre-test and post-test ($M = 51.57$ ($SD = 6.96$); $M = 53.86$ ($SD = 10.23$)) for experimental group ($z = -1.191$, $p = .234$). ▫ No significant differences in self-esteem scores pre-test and post-test ($M = 47.62$ ($SD = 6.40$); $M = 50.69$ ($SD = 7.38$)) for control group ($z = -1.691$, $p = .091$).
Miles[73]	Art	N/A	▫ Drawings. ▫ Children were individually asked to explain what they had drawn and were also discussed with key staff.	Children were individually asked to explain what they had drawn and were also discussed with key staff. ▫ 24 refugee boys indicated that they had been 'soldiers' in their past lives (usually through holdings guns or wearing uniform); 22 boys drew themselves as soldiers in the future; 13 boys drew themselves as 'something else'. ▫ Other children drew themselves as farmers/buffalo herders in the past. ▫ Some of the children drew themselves as teachers ($n = 9$), preachers/evangelists ($n = 7$), and other jobs (e.g., doctors, politicians)
Mohammadzadeh *et al.*[69]	Life Skills Education Program	**(1)** Intervention group ($n = 139$) **(2)** Placebo group ($n = 132$)	▫ Depression Anxiety Stress Scales (DASS-21).[79] ▫ Rosenberg Self-Esteem Scale (RSES)[86] Malay version[87] employed pre-, post-test and at a 4-month follow-up. ▫ A mixed within- and between-subjects ANOVA was used to assess the means differences of the scale variables in the intervention and control groups.	*Intervention effects* ▫ Significant difference in the mean scores for depression ($f = 33.80$, $p < 0.001$, $\eta 2 = 0.11$) among the 3 time points: pre-, post-test and at a 4-month follow-up. ▫ Mean scores were significantly different between groups for anxiety ($f = 6.28$, $p < 0.01$, $\eta 2 = 0.02$), stress ($f = 32.05$, $p < 0.001$, $\eta 2 = 0.11$), and self-esteem ($f = 54.68$, $p < 0.001$, $\eta 2 = 0.17$). ▫ No significant difference between intervention group and placebo group for depression ($f = 2.33$, $p = 0.13$). *Post Hoc (Bonferroni) test (between groups)* ▫ Differences in depression (Δ mean = -1.72, $p < 0.001$), anxiety (Δ mean = -0.99, $p < 0.01$), stress (Δ mean = -1.97, $p < 0.001$) and self-esteem (Δ mean = 5.24, $p < 0.001$) scores between intervention and control groups at post-test.

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				▫ Significant changes in the mean scores for anxiety (Δ mean = -1.92, $p < 0.001$), stress (Δ mean = -3.01, $p < 0.001$) and self-esteem (Δ mean = 4.39, $p < 0.001$) at a 4-month follow-up. ▫ No significant differences between the intervention and control groups at 4-month follow-up (Δ mean = -0.18, $p < 0.67$). *Post Hoc (Bonferroni) test (within groups)* ▫ Significant difference between pre-test and post-test (Δ mean = 2.00, $p < 0.001$) for depression, stress (Δ mean = 2.80, $p < 0.001$), and self-esteem (Δ mean = -5.48, $p < 0.001$), with a large effect and effect size in the intervention group ($\eta 2 = 0.32$, $\eta 2 = 0.30$, $\eta 2 = 0.20$; respectively). ▫ No significant difference in the mean scores for the study variables between post-test and follow-up at $p < 0.001$ value except for depression (Δ mean = -1.37, $p < 0.001$) in the intervention group. ▫ No significant difference was found in the mean scores for the depression, anxiety, stress, and self-esteem at $p < 0.001$ value between pre-, post-test and at a 4-month follow-up for control group.
Noh[70]	Resilience Enhancement Program	**(1)** Experimental group ($n = 16$) **(2)** Control group ($n = 16$)	Self-reported questionnaires on: ▫ The family APGAR[88] as translated into Korean[89] to assess YEH's perspectives on their family functions; ▫ Resilience (The Youth Korea Resilience Quotient-27 [YKRQ-27]);[90] ▫ Depression (BDI-II) [91] translated into Korean; [92] ▫ Anxiety (Beck Anxiety Inventory [BAI])[93] translated into Korean;[94] ▫ Problem drinking (The Alcohol Use Disorders Identification Test Alcohol Consumption Questions [AUDIT-C]) [95] assessed at pre-test, post-test, and at a one-month follow-up (1m F/U); ▫ Mann-Whitney *U* test and Fisher's Exact probability were used to test the homogeneity	No statistically significant difference in homogeneity in general characteristics between experimental group and control group was found. *Resilience* ▫ Significant group-by-time interaction effects between pre-test and post-test (*beta* = 12.42, $p = 0.002$) and at a 1m F/U (*beta* = 12.72, $p = 0.007$) ▫ Significant increase in resilience found at baseline ($M = 80.43$, $SD = 17.86$), to post-test ($M = 91.00$, $SD = 16.27$) and at a 1m F/U ($M = 87.46$, $SD = 16.27$) for experimental group. ▫ Decreases in resilience for control group across intervention period ($M = 93.56$ ($SD = 16.49$); $M = 93.00$ ($SD = 16.14$); $M = 89.38$ ($SD = 14.67$)). *Depression* ▫ Significant group-by-time interactions was seen between pre-test and post-test (*beta* = -5.33, $p = 0.037$), but not between pre-test and at a 1m F/U (*beta* = -4.48, $p = 0.120$). ▫ Significant time effect between pre-test and at a 1m F/U (*beta* = -3.33, $p = 0.030$). ▫ Significant decrease in depression across intervention period for experimental group (pre-test: $M = 22.00$ ($SD = 13.66$); post-test: $M = 17.00$ ($SD = 15.22$); 1m F/U: $M = 15.62$ ($SD = 16.08$)) and for control group ($M = 15.00$ ($SD = 10.45$); $M = 12.23$ ($SD = 9.11$); $M = 9.23$ ($SD = 9.93$)).

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			between experimental and control group in terms of general characteristics and baseline (pre-test) scores.	*Anxiety* ▫ Significant group-by-time interaction was seen between pre-test and at a 1m F/U (*beta* = -8.00, *p* = 0.022). ▫ Average levels of anxiety decreased across the study period for experimental group (pre-test: *M* = 22.56 (*SD* = 13.66); post-test: *M* = 17.00 (*SD* = 15.22); 1m F/U: *M* = 15.62 (*SD* = 16.08)). ▫ Decrease in anxiety scores pre-test to post-test for control group (*M* = 7.37 (*SD* = 6.26); *M* = 5.23 (*SD* = 6.52)), but an increase in anxiety was found at 1m F/U (*M* = 8.23 (*SD* = 12.71)). *Problem drinking* ▫ Significant group-by-time interaction was seen between pre-test and post-test (*beta* = 3.58, *p* < 0.001) and at 1m F/U (*beta* = 0.63, *p* = 0.038). ▫ Average level of problem drinking decreased across the study period for experimental group (pre-test: *M* = 3.50 (*SD* = 4.10); post-test: *M* = 2.57 (*SD* = 3.82); 1m F/U: *M* = 1.92 (*SD* = 2.78)). ▫ Problem drinking scores remain average at post-test for control group (*M* = 2.69 (*SD* = 2.95)) and at a 1m F/U (*M* = 2.54 (*SD* = 3.18)) which were higher at pre-test (*M* = 2.50 (*SD* = 3.18)).
Noh & Choi*[71]	Family-based Mental Health Program	**(1)** Experimental group **(2)** Comparison group	▫ Self-reported questionnaire surveys at baseline, immediately after and at a 1-month follow-up.	N/A
Sarmini & Sukartiningsih[67]	Kampung Anak Negeri (KAN)	N/A	▫ Field observations and in-depth interviews.	KAN was established by the Surabaya City Government to provide social services: The main goal of KAN is to provide education and protection for street children, and to return them to their respective families. KAN has 6 responsibilities: ▫ The needs of street children are the responsibility of the government ▫ Educational rights ▫ *'Pak Ustadz'*, a spiritual adviser ▫ Honest, disciplined and responsible: simple steps to build self-integrity (fulfilling the needs of mental behavioural guidance through coaching) ▫ Networks as social capital and survival strategies (skills guidance) ▫ Achievement culture: changing the future orientation of street children

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Solong *et al.*[68]	N/A	N/A	▫ Primary data: field observations and in-depth interviews. ▫ Secondary data: documents obtained via government agencies on street children, publications (books, journals, magazines).	Three modes of services for street children according to the Ministry of Social Affairs: 1. *Community based social services* ▫ Prevent children from poor families in becoming street children. 2. *Street based social services* ▫ Prevent street children from becoming criminals. 3. *Centre based social services* ▫ Children are taken from the street and placed in special service institutions such as orphanages. Social services collaborate with several units to prevent/manage street children. ▫ Collaboration with Civil Service Police to patrol street children's activities. ▫ Additionally, children found on the street will be taken to the police station, and then taken to an orphanage as their new place of residence. ▫ Mental, physical, social and skills guidance during rehabilitation.

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Mental health interventions/programs

This review identified eight unique mental health programs and interventions for YEH in EAP. These were clustered thematically into six categories:

1. **art**: interventions that provide a creative and non-verbal outlet for self-expression, healing, and personal growth for YEH[72,73];
2. **cognitive behavioural therapy**: an intervention that targets negative emotional states and cognitive distortions by developing coping strategies[27];
3. **life skills education:** interventions that equip YEH with essential practical abilities in the real world[69];
4. **resilience enhancement**: an intervention to improve protective factors associated with resilience[70];
5. **family strengthening**: interventions that explicitly target families in the program as a key focus that fosters positive relationships and support networks[71];
6. **government interventions/services**: the role of the government in supporting YEH. [67,68]

Each selected study was organised by thematic category below and subjected to quality checks using the CASP checklists[62–65] matched by study design (see Appendix C).

Art Two studies used a quasi-experimental design to evaluate the effectiveness of different forms of art as a therapeutic intervention for abused youth in orphanages and militarised children in centres, which took place in the Philippines[72] and in Southeast Asia. [73] Art as an intervention for these studies included art psychotherapy, poetry psychotherapy and art without boundaries as a general communication and therapeutic tool.

The objectives of these studies were to evaluate the effectiveness of visual arts and poetry as interventions to alleviate depression and PTSD symptomatology,[72] as well as to understand the children's perceptions of hope. [73] Although each study reported on different measures of art as an intervention, both studies reported themes of art creating a sense of agency, catharsis, and personal empowerment for YEH. In one study, Brillantes-Evangelista (2013)[72] measured PTSD and depression symptoms using various instruments (see Table 4), including self-reported scales and participant observation throughout the intervention period. Results showed a decrease of depressive symptoms in mean scores pre-test to post-test among the group receiving poetry psychotherapy, indicating a positive impact on their wellbeing (Table 4). Whereas a reduction of PTSD symptoms in mean scores was evident among the visual arts group, suggesting that this form of art therapy was beneficial for addressing trauma-related symptoms for YEH.[72] Brillantes-Evangelista[72] noted that although these results suggest that visual arts and poetry psychotherapy were effective in reducing psychological symptoms for abused adolescents living in orphanages, art seemed to have been helpful in other ways by empowering YEH to actively engage in their own healing and recovery. For instance, poetry allowed youth to find meaning and purpose in their experiences, by transforming hardships into something meaningful and artistic which can inspire hope. The notion of 'hope' was also noted in the second study[73] where militarised children had visualised their aspirations, dreams, and personal goals through art. Miles (2000)[73] concluded that despite their circumstances, art had allowed them to envision a positive future and work towards achieving it, instilling hope for a better tomorrow.

CBT One RCT study conducted by Hyun, Chung and Lee (2005) in South Korea evaluated the effects of group CBT on self-esteem, depression and self-efficacy of runaway adolescents residing in shelters.[27] The authors measured these using Western-derived scales (Table 4) that were translated into Korean and employed at pre- and post-test. In this study, the most common reason for running away was parental abuse, especially by their father (40.7%), and family conflict (29.6%). There were also high rates of reported problem drinking (66.7%) and smoking (77.8%) among YEH. Results demonstrated a reduction in depression and improved self-efficacy in the experimental group from pre-test to post-test, while there were no significant changes in self-esteem documented pre- and

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post-test for both experimental and control groups (see Table 4). However, the authors revealed that an eight-week intervention period may be too short to yield noticeable results to self-esteem.[27] The study's RCT design and use of validated measures (e.g., BDI[78]; Table 4) enhanced the reliability of the study's findings (CASP[64]; Appendix C).[62] However, the geographical limitations should be considered when applying the results to YEH populations in different regions in EAP (see **Table 5** for the full strengths and limitations of each study).

Table 5. Strengths and limitations of each paper.

Author(s) & Year	Strengths	Limitations
Brillantes-Evangelista[72]	▫ Considered cultural art practices that were ingrained in Filipino history; ▫ Measures were translated to Filipino and back translated to English; ▫ Visual arts and poetry (VAP) psychotherapy breaks the barrier and transgressed beyond spoken language between therapists/practitioners and participants; ▫ Good generalisability for cross-cultural research; quasi-experimental design; ▫ As participants learnt the skills of VAP, these skills can be used outside of therapeutic practices and in their daily lives to alleviate depression/PTSD symptomology.	▫ Findings cannot be generalised to youth with learning disabilities; ▫ The main facilitators were not a certified art or poetry therapists; These disciplines are not yet institutionalised in the Philippines; ▫ Confounding variables such as personality and preference (towards visual art or poetry) could have affected participants' responsiveness to treatment; ▫ Intervention period too short (eight sessions); ▫ Intervention period (in weeks) was not documented; ▫ Authors did not assess long-term outcomes on depressive/PTSD symptomology.
Hyun *et al.*[27]	▫ Good replicability; RCT design; supported existing literature; ▫ Clear definition of runaway adolescents; ▫ Culturally sensitive; measures were translated to Korean; ▫ Authors reported runaway reasons – good for future research in preventing runaway behaviour.	▫ Intervention period may be too short to yield noticeable results on self-esteem; ▫ Age range of participants were not reported – only mean age was reported; ▫ All participants were male; ▫ Self-reported inventory – potential under or overreported symptoms; ▫ Fairly outdated research findings; ▫ Small sample size.
Miles[73]	▫ Child-centred approach; ▫ Art acts like a facilitator between the researcher and the child; implications	▫ Does not specify how drawing helped militarised children psychologically;

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	on how art is a gateway to the child's mind; ▫ Conducted on militarised children, a distinct and at-risk population.	▫ Children's age will affect what they draw; ▫ Only the child themselves can understand what they have drawn. The study relies on adult interpretation of the drawings and is subjective; ▫ Interpreters were the children's teachers who were also refugees and may have affected the children's drawings.
Mohammadzadeh *et al*.[69]	▫ Based on WHO's life skills education (WHO, 1997); ▫ Covers a range of practical life skills, crucial for YEH; ▫ Large sample size of both male and female participants; ▫ Measures were translated to Malay; ▫ Good replicability; RCT design; ▫ Diverse participant nationality; ▫ Cost-effective and easy to administer; ▫ Can help policymakers in paying special attention to life skills-based interventions; ▫ High study potential for different populations.	▫ Self-reported questionnaires – potential social desirability bias or misunderstanding; ▫ Intervention period not specified; ▫ Educational session for the control group was shorter than the participants receiving intervention.
Noh[70]	▫ Good replicability; quasi-experimental study design; ▫ Conducted on female runaway youth – there is an underrepresentation of existing data/literature surrounding this population; ▫ Targeted problem drinking which is what YEH or runaway adolescents turn to.	▫ Homogeneity between the control and experimental groups showed no statistical difference at baseline; ▫ Intervention period not specified; ▫ Convenience sampling – lack of variety, bias in sampling; ▫ Small sample size.
Noh & Choi[71]	▫ Culturally sensitive: addresses and emphasises the role of family that is deeply ingrained in Korean culture; ▫ RCT design; ▫ Tailored intervention specific for socio-cultural contexts;	▫ To date, this program has not been tested for its effectiveness and efficacy and might not yield the results expected from the authors; ▫ Only a small selection of shelter workers and runaway adolescents

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	▫ Uses evidence- and theory- based methods for practical applications; ▫ It is a comprehensive needs assessment – the program was created based on a combination of literature reviews, interviews with shelter workers and runaway adolescents residing in shelters.	were interviewed for the comprehensive needs assessment. Other extraneous factors could have been missed out; ▫ Other variables such as school, peers, and environmental factors play an equally important role.
Sarmini & Sukartiningsih[67]	▫ Socio-cultural specific: includes Indonesia's strong Islamic values; ▫ Established by the government; ▫ The KAN emphasises that street children should be the responsibility of the government.	▫ The KAN is only specific to Indonesia – limited generalisability; lack of replicability; ▫ Subjectivity and bias – relies on researcher's interpretation; ▫ Small sample size; ▫ May not establish cause and effect due to the absence of controlled experimental conditions; ▫ Did not quantify any outcomes.
Solong *et al.*[68]	▫ In-depth description of up-to-date current policies on street children.	▫ Small sample size; only 2 street children were interviewed – may not be generalisable; ▫ Lack of replicability; time-consuming and resource-intensive; ▫ Selective reporting bias.

Life skills education Mohammadzadeh *et al*. (2017)[69] conducted a parallel single-blind (subject-masked) RCT conducted in Malaysia which evaluated the effects of life skills-based intervention programs on the emotional health and self-esteem of adolescents residing in orphanages.[69] This program was designed based on the Life Skills Education (LSE) formulated by the World Health Organisation (WHO)[96]— a structured evidence-based guideline for children and adolescents, stemming from the stress-coping theory by Lazarus and Folkman.[97] The LSE framework was a valuable resource for YEH, as it equipped them with essential skills and abilities to effectively navigate challenges they experienced in everyday life, promoting personal growth and resilience.[96] The study's intervention sessions focused on a range of life skills: self-awareness, critical and creative thinking, communication, intra- and interpersonal relationships, problem solving, decision making, empathy, and coping with emotion and stress. Outcomes were assessed using DASS-21[79] and a Malay version of Rosenberg's[86] Self-esteem Scale (RSES)[87] at pre-test, post-test and at a four-month follow-up (F/U). Results revealed that the LSE program significantly decreased mean scores for anxiety, depression and stress, and increased self-esteem from pre-test to post-test for participants receiving intervention. Notably, there was an increase of depression scores from post-test to the four-month F/U implying that LSE demonstrated efficacy in addressing depression, yet its impact was insufficient for sustainable change beyond the four-month period (Table 4). These findings[69] could have high potential for research in different regions in EAP because of its good replicability and RCT design, especially because this study had a diverse range

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of ethnicities. However, an important consideration was that the intervention period was not specified (Table 5).

Resilience enhancement A study on Korean female runaway adolescents by Noh (2018) assessed the efficacy of a Resilience Enhancement Program using a quasi-experimental design.[70] This design was appropriate based on ethical considerations and real-world settings, as it allowed the researcher to observe the program in an orphanage without compromising ethical guidelines or manipulating variables (CASP[64]; Appendix C). The Resilience Enhancement Program was developed based on interviews with female runaway adolescents residing in shelters and a comprehensive review of literature focused on individual protective factors relevant to YEH and runaway adolescents. Resilience, depression, anxiety, and problem drinking were assessed using self-reported questionnaires (Table 4) at pre-test, post-test, and at a one-month F/U. While the intervention group exhibited notable reductions in depression at pre-test and at a one-month F/U, this decrease was not exclusive to the overall study period: Depressive symptoms decreased over the study duration for both the intervention and control groups. Reductions of anxiety levels were also observed in the intervention group compared with control; and interestingly, the control group experienced a rise in anxiety levels at the one-month F/U.[70] In terms of problem drinking, the average levels decreased consistently for the intervention group throughout the three time points (Table 4). Although these were preliminary results, the small p-value suggested that the program had an effect on the dependant variables that was unlikely to occur by random chance alone.[70]

Family strengthening Noh and Choi (2020) developed a family-based mental health program for runaway adolescents residing in youth shelters using an intervention mapping (IM) protocol.[71] Despite its efficacy and effectiveness not yet being evaluated, this program focused on family strengthening that aligned with Korean cultural values that shaped their context. It was developed by conducting a comprehensive literature review and interviews with runaway adolescents and shelter workers. A logical framework outlining family relationship and mental health issues faced by runaway adolescents was then developed based on the problems that were identified during the preliminary IM process. The program used theory- and evidence-based methods for practical applications such as motivational interviewing, cognitive reappraisal, consciousness-raising, skills training, guided practice, social modelling, improving emotional states and verbal persuasion. Runaway adolescents receiving the intervention will have a total of eight individual and family sessions altogether. The family sessions consisted of four themes: family engagement and establishing motivation for change, rebuilding relationships with family, improving family communication and improving collaborative problem-solving. The effectiveness of the developed program will be evaluated using a RCT on adolescents residing in shelters aged 12 to 18.[71] Data will be collected using self-reported questionnaires.

The developed family-based mental health program has high study potential for YEH specific to the EAP context. However, to date, this program has not been tested for its efficacy and effectiveness and might not yield the positive health outcomes expected from the authors.

Government interventions/services The following two papers[67,68] focused on government interventions/programs and/or policies regarding mental health of YEH, thereby met the inclusion criteria (Table 1).

One research case study paper addressed the policies implemented by the Makassar City Regional in Indonesia in managing street children by collecting primary data (field observations and key informants) and secondary data (official government documents and literature publications on street children).[68] They identified three social services implemented by the Makassar City Regional in managing street children (Table 6).

Table 6. Three services implemented by the Makassar City Regional.

Services	Description
Community-based	▫ Social services for street children were established within the community depending on the residence of the child and their family.

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	▫ The primary objective of this service was to prevent children from poor families who were at significant risk of ending up as street children. This service was a collective effort involving parents and community members.[68] ▫ Social services were implemented on street environments and public spaces.
Street-based	▫ The goal of this service was to deter street-working children from getting involved in criminal activities, with the intention to reintegrate them back with their families. [68]
	▫ Dedicated institutions like orphanages were established to provide care for street children. Children were removed from the street environment and placed in these facilities.
Centre-based	▫ The primary goal of this service was to address and heal the physical, psychological, and social injuries street children experience. ▫ This service was provided indefinitely, allowing the children to recover from the negative impacts of street life. [68]

Despite these service policies, Solong *et al*.(2023) [68] identified factors inhibiting government policy in managing street children. These included insufficient quantity of human resources, budget limitations, insufficient facilities and infrastructure, unstable community economy and a lack of strict implementations for regional regulations regarding the management of street children. In spite of that, initial steps have been carried out by the government to prevent the development and expansion of street children. These included collaboration with Civil Service Police Units to patrol street children's activities and/or removing them from street environment and into police stations so that they can be then placed into orphanages. [68]

The Kampung Anak Negeri (KAN) was a children's village established by the Surabaya City Government in Indonesia that protected the rights of street children, aiming to empower street children, with the goal of granting them agency to enhance their self-resilience to deter them from returning to the street. Sarmini and Sukartiningsih (2018) evaluated the role of the KAN in facilitating the transition of street children towards a regular life.[67] Data was gathered by participatory observation and in-depth interviews with the street children placed in the KAN. The KAN established by the Surabaya City Government had six roles and responsibilities.[67] These responsibilities were described in Table 7.

Table 7. Responsibilities of the KAN.

	Responsibilities	**Description**
1	The government should be responsible for fulfilling their basic needs and providing support.	This indicates that the government should take on a protective and caregiving role for street children, addressing their needs for safety, shelter, food, education, and other essential services.[67]
2	Educational rights	Efforts for educational rights of street children is upheld; this approach indicates a commitment to addressing educational challenges faced by street children by offering various pathways for learning, tailored to their individual needs and circumstances.[67]
3	*'Pak Ustadz'* – a spiritual mental advisor	A *Pak Ustadz* role in the KAN holds particular significance due to the country's strong Islamic influence and values; they can offer spiritual guidance for street children, helping them connect with their faith and find a sense of purpose and identity. Additionally, as Indonesian culture is deeply rooted in Islamic traditions, *Pak Ustadz* can teach street children about cultural norms, respect, and moral values, aiding their integration into society.[67]

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4	Mental and behavioural guidance	This is achieved through coaching activities; it aims to provide support and guidance to street children by helping them transform their thought patterns and behaviours to align with positive societal norms. This approach addresses the unique challenges faced by street children by guiding them toward more constructive choices and behaviours that lead to better mental and behavioural outcomes.[67]
5	Life skills-based education	These are in the form of entrepreneurial activities within the children's village, as well as partnership with different organisations for apprenticeship programs – helpful in acquiring valuable experience that can enhance their prospects for future employment and self-sufficiency.[67]
6	Achievement culture	The KAN is actively involved in nurturing the interests and talents of street children: they have received commendable accomplishments such as becoming champions in bicycle racing and winning vlog competitions. This signifies that KAN provides a supportive environment where street children can explore their passions and talents, gain recognition for their abilities, and develop a sense of accomplishment and self-esteem.[67]

Overall, KAN served as a comprehensive support system for street children that respects and integrates Indonesian culture into its program, aiming to improve mental health outcomes and ultimately break the cycle of street life and create a better future for themselves.[67]

4. Discussion

The main objective of this review was to provide systematic evidence on the different types of mental health services and interventions for YEH in EAP and their impact on overall quality of life and wellbeing for YEH. A wide variety of mental health interventions and programs for YEH in EAP was identified. These included art and poetry psychotherapy for abused Filipino adolescents living in shelters,[72] art without boundaries for militarised children,[73] CBT for runaway Korean adolescents,[27] a life skills education program for Malaysian adolescents living in orphanages,[69] a resilience enhancement program for female runaway Korean adolescents[70] and development of a family-based mental health program for runaway adolescents.[71] In essence, these mental health interventions and programs were effective in alleviating symptoms of anxiety, depression, stress, and PTSD, as well as targeting problem drinking. Additionally, there were notable increases in overall resilience and self-efficacy for YEH in EAP, and they were taught various life skills to tackle any daily stressors they may experience.

Notably, there were only two programs and social services found in this review that were established and implemented by the government that targeted street children.[67,68] While the researchers did not directly assess the outcomes of these services, their reports underscored the importance of creating culturally sensitive programs empowering and improving the quality of life for YEH in Indonesia, as well as identifying factors inhibiting the effective implementation of government policies aimed at addressing the needs and challenges faced by street children.[67,68]

Prior to this review, most systematic reviews and previous studies had mainly focused on interventions conducted in Western countries. Furthermore, there was a lack of comprehensive overview of literature surrounding interventions and programs for YEH in EAP alone, although there was an extensive body of literature emphasising the different perceptions of mental illness cross-culturally, which may impact the acceptability of treatment options and adherence to treatment plans.[43] In this review, risks associated with youth homelessness in EAP, such as stress, maladaptive behaviour, and suicidal behaviours were reportedly similar compared to Western countries (e.g., Hyun *et al.*[27]; Moskowitz *et al.*[19]; respectively). Additionally, consistent with findings from Western literature,[11,13] baseline assessments also revealed high levels of adverse mental health outcomes in various studies conducted in EAP.[27,69,70],[72] Nonetheless, Western-developed therapeutic systems such as CBT and LSE were also found to be effective in alleviating symptoms in Korean and Malay adolescents.[27,69]

Having said that, it is essential to highlight that these instruments and measures were socio-cultural specific which could have influenced the efficacy and effectiveness in treatment response.

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For example, five studies translated the measures into the country's main language.[27,69,70],[72,73] Translating the psychological instruments into the country's language was crucial, given the nature of the targeted population for this review. YEH may have limited proficiency in the English language, especially if most of the participants belong to families of low SEP and were residing in orphanages, shelters or on the street and have not completed or received formal education.[27,67–73] Although this was not specified in the studies, YEH with limited education may lead to feelings of discomfort or shame when responding to instruments in a language they were unfamiliar with. Therefore, using their first language may have reduced stigma and encouraged them to share their experiences openly, promoting accessibility and inclusivity in the research process for this population.[98]

Exploring mental health interventions and programs

Six key themes were identified among the eight included studies: art, CBT, LSE, resilience enhancement, family strengthening, and government interventions/services.

Art

Art-based interventions utilise creative mediums that do not primarily rely on spoken language to convey emotions, thoughts and experiences.[99] This has been well documented in numerous past and recent Western literature with adolescents in bridging that gap between therapists and adolescents.[100,101] It uses a child-centred approach.[102] As demonstrated in a sample of militarised children in SE Asia,[73] it broke down communication barriers and acts as a facilitator between the researcher and the CYP.[73] This was especially beneficial for YEH, as art can be used as a tool to amplify their voices in a society where it is marginalised and unheard.[99] This, in turn, may reduce the overall stigma surrounding homelessness, shifting the focus from defining youth homelessness solely by their housing status to appreciating their artistic talents and creativity; it helps people see their multifaceted identities beyond homelessness as shown in The Philippines.[72] Yet, it is important to note these findings may not be generalised to youth who have learning disabilities (LDs) and/or cognitive difficulties in engaging in complex art or poetry activities. Even so, with tailored interventions and adaptations, art and poetry psychotherapy can minimise barriers and promote autonomy, which empowers YEH with LDs to enhance their self-expression and build confidence, wherein traditional therapeutic approaches can lack.[103]

CBT

Findings from South Korea[27] have been reported in previous literature by Rohde *et al.*[104] for adolescents with comorbid substance abuse and in parallel with more recent findings for street children in Mexico City[105] and in Iran[106]. The effectiveness of cognitive techniques in CBT for reconstructing positive worldviews was notable as it identified and challenged negative thought patterns.[107] Importantly, the two themes in Hyun *et al.*'s study '*developing coping strategies*' and '*planning for future life*',[27] equipped runaway youths with practical coping skills suited to their circumstance. For example, it encouraged them with long-term thinking beyond immediate survival needs, thus promoting a sense of direction and pathways to stability such as housing, employment, and education. Additionally, improved self-efficacy, indicated by the theme *'raising self-consciousness'*, aligned with Bandura's[108] model of self-efficacy. In the context of homelessness, this model postulated that with the appropriate training, runaway adolescents can interpret emotional and physical reactions (e.g., anxiety and stress) as signs of competency which increased their overall self-efficacy evident in this study.[108]

Although results from this study demonstrated that CBT had no effect on self-esteem, this has been challenged by a recent meta-analysis that found CBT-based interventions to be efficacious for treating low self-esteem.[109] Yet, these findings may not be generalisable to Korean adolescents, as it was conducted on adults in the UK, where self-esteem is prioritised in Western cultures.[110] In contrast, self-esteem is conceptualised differently as shown elsewhere in the East among a more comparable sample of Chinese children.[111] Self-esteem is multifaceted and complex, influenced by a myriad of internal and external factors; it could simply be that the intervention period of eight weeks was too short to yield a noticeable impact on self-esteem.[27] Short intervention periods may

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not adequately address cultural nuances and beliefs that impact how self-esteem is perceived and influenced in Korean runaway adolescents.[43] Additionally, it should be highlighted that the subjects of this study were all male, and there could be potential gender disparities in self-efficacy, depression and self-esteem presentations and responsiveness to CBT.[27] Thus, future research could benefit in this area by exploring the long-term effects of cultural-specific and extended interventions to develop more comprehensive and effective interventions that address unique challenges for this vulnerable population.

LSE

LSE for depressive symptoms was found insufficient for sustainable change.[69] This observation could be attributed to the inherent characteristics of youth homelessness. The lack of continued support that they had received during the intervention period may lead to a resurgence of depressive symptoms, given that depression is a highly recurrent disorder.[112] In other words, if the adolescent returned to the same challenging or unstable living conditions or environment after the intervention, the stressors associated with homelessness could be precipitating factors for the re-emergence of depressive symptoms. It appeared LSE had a more sustainable effect on anxiety, stress, and self-esteem.[69] Comparable outcomes have been observed in previous studies among Indian adolescents[113] and more recently in Indonesian students.[114]

In contrast, LSE illustrated positive effects on self-esteem and resilience for YEH living in orphanages.[69] This phenomenon could be explained by the intricate interplay between life skills development and positive feelings of self-worth. Learning and mastering certain life skills can contribute to a positive self-perception and higher self-esteem from feelings of accomplishment,[115] and conversely, having positive self-worth can motivate them to develop and practice their life skills.[113] As YEH develop practical skills, their self-worth and confidence are likely to improve and in turn can motivate them to further enhance their life skills and actively engage in efforts to overcome their challenges. Ultimately, this positive cycle can empower this population by equipping them with valuable tools and a stronger sense of self, fostering resilience and assisting their journey towards stability and self-sufficiency.

Resilience enhancement

Resilient enhancement programs[70] offered significant advantages for runaway adolescents, as these can positively influence mental wellbeing, and appeared promising for enhancing resilience and mitigating problem drinking. Factors associated with resilience such as self-esteem and self-regulation, have been well documented in previous literature with Korean adults[18,116]; while relational and problem-solving skills[117] and goal-setting skills[118] have been considered as protective factors for runaway adolescents. Since the intervention program used in Noh's study[70] integrated the abovementioned protective factors linked to resilience, these elements were believed to have contributed to the observed increase in resilience among participants in the intervention group.[70]

In terms of explaining reduced anxiety, Noh's study[70] had provided progressive relaxation training and deep breathing techniques that counteracted physiological responses to stress.[119] These equipped YEH with immediate skills to manage moments of crisis and distress which therefore increased their overall resilience.[120] The issue of youth homelessness is often interconnected with the challenge of problem drinking in both the East and the West, as YEH may resort to alcohol as a coping mechanism to navigate the hardships and uncertainties they encounter on the streets.[121,122] The current finding of decreased problem drinking was consistent with previous findings in the UK by Rew *et al.*[123]; both Noh[70] and Rew *et al.*[123] included components assertive and effective communication, as well as goal-setting skills in their interventions, which are recognised as protective factors in building resilience. In essence, resilience enhancement programs hold the promise of catalysing positive transformation in the lives of female runaway adolescents by fostering their growth.[70]

Family strengthening

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The role of family in addressing runaway behaviour is important as it holds paramount importance in not only Korean culture, but many EAP cultures.[71] Although psychological interventions for youth homelessness have been evaluated in previous Western studies, the authors suggested that these interventions do not reflect the actual situation Korean runaway adolescents experience.[71] Thus, the family-based mental health program Noh and Choi[71] developed aimed to improve mental health outcomes for this at-risk population using socio-cultural contexts. During their literature review, the authors identified that runaway adolescents experience high rates of dissatisfaction with family life.[124] Additionally, family factors such as poor communication and emotional support at home, financial problems, and poor psychological well-being of the parent or caregiver[125] can affect mental health and their quality of life. As a result, the runaway adolescents who participated in the interviews revealed they were more likely to engage in risky and maladaptive behaviours as a response to stress from family problems.[125] These issues identified have been supported by a range of parent—child theories. For example, the parental monitoring theory[126] emphasised the importance of parental supervision and awareness of adolescent' activities. If the runaway adolescent experienced a lack of parental warmth because of their poor communication and emotional support, they were more likely to be involved in risky behaviour associated with homelessness/running away. As the developed program recognised the cultural significance of family in Korean society, it emphasised the importance of re-establishing strong family connections to deter adolescents from engaging in runaway behaviour.[71] Ultimately, the parent—child collaboration aligned with the cultural fabric of Korean society and aimed to create a nurturing environment where adolescents feel supported and understood without resorting to running away. Understanding the parent—child dynamic can offer valuable insights for other EAP societies facing similar challenges. It underscores the significance of familial bonds, open communication, and community support structures to provide a safety net for YEH. This emphasises a proactive intervention in addressing root causes of youth homelessness, offering effective strategies that prioritise prevention and holistic support.

Government interventions/services

Interestingly, while both EAP and Western countries aim to address youth homelessness, there are notable differences in their government interventions/services due to varying cultural, social, and economic contexts. For example, while Western programs often emphasise individual autonomy and direct service provision,[127] government interventions/services in EAP regions may place greater emphasis on familial or community support networks that implement spiritual values.[67] Moreover, there exists a more established network of government-funded health and wellbeing services in the West, encompassing mental health and substance abuse counselling.[128] In contrast, the selected studies in this review revealed that access to healthcare services in EAP regions were more limited, with fewer specialised services for YEH provided by the government. In summary, tailoring support specific to sociocultural contexts is crucial for effectively addressing the unique needs of YEH and future efforts should focus on bridging these gaps to ensure equitable access to comprehensive support services for this vulnerable population in EAP.

Limitations

To the best of our knowledge, there have been no previous systematic or scoping reviews on the different types of mental health services and interventions for YEH in EAP and their impact on overall quality of life and wellbeing for YEH. Despite finding positive mental health outcomes for YEH resulting from these psychological interventions and programs, there were several limitations of this review that should be noted. First, one of the primary objectives of this review was to identify different mental health interventions and programs for youth homelessness in EAP. According to The World Bank,[58,59] there are 15 countries within EAP, and yet, this review only found evidence of effective interventions and government programs in four named countries (i.e., Indonesia, Malaysia, South Korea, The Philippines) with the majority being conducted in South Korea (n = 3). Importantly, seven (87.5%) of the reviewed studies were conducted in urban areas or in the capital city which might not be reflective of the broader population. Homelessness patterns might differ

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significantly between urban and rural settings. Factors contributing to homelessness, available resources, programs or interventions, and support networks can be different in various parts of a country, especially if many of the EAP cultures rely on traditional folk medicine and healers.[129]

Second, subpopulations of youth homelessness, such as LGBTQ+ or indigenous youth, might be more prevalent in certain regions or outside the capital city. Focusing solely on urban areas could also neglect the unique challenges faced by these groups. Additionally, the only variation of 'homelessness' that was not included in this review was *'invisible homelessness'* as there was no existing literature that met this review's inclusion criteria. Third, differential definitions of homelessness used by the studies and the data that were collected do not make them comparable. However, considering shared characteristics and successes of similar programs in both Western and Eastern countries, this might not have been a significant factor contributing to the effectiveness of Western therapies suggesting that tailoring and adaption could enhance their efficacy. The differences in age of YEH and sampling may have affected comparability and generalisability as some YEH were mixed with higher age groups and some studies only reported the mean age for the sample. Therefore, these settings and groups may not be comparable.

Despite these limitations, a notable aspect where this review excels was that it was not limited to one study design and high-quality methodologies (e.g., RCTs, quasi-experimental design), but it also included case studies for in-depth qualitative data, enabling a more comprehensive and nuanced understanding of youth homelessness in EAP regions. Additionally, six papers (75%) out of the eight selected for this review were all conducted and published relatively recently, ensuring that the findings provided were accurate and relevant to the current mental health interventions, policies, and outcomes for YEH in EAP.

Implications for future research, policy, and practice

The findings of this review suggest that different mental health interventions and programs have positive impacts on overall mental health outcomes and quality of life for YEH. Despite that, a large gap of robust evidence-based research in the EAP region is still evident. Future research should prioritise filling these substantial knowledge gaps by conducting comprehensive studies that encompass various EAP regions and diverse populations like YEH. There should be a pressing need to engage in co-designing research and programs with YEH to authentically incorporate lived experience voices. For example, two included studies in this review effectively integrated YEH voices,[70,71] underscoring the importance of this approach in comprehending cultural nuances. This inclusive methodology fosters a deeper understanding of the diverse challenges faced by YEH and can enhance the relevance and effectiveness of interventions or programs aimed at supporting them.

Importantly, researchers should strive for inclusive sampling that covers urban, suburban, and rural areas to provide a holistic understanding of unique challenges faced by YEH in different settings. Providing robust research across different EAP regions could provide comparative studies that highlight disparities, commonalities, and explanations for the different pathways that lead to homelessness. This holds particular significance in EAP regions for youth homelessness when contrasted with Western studies, as it helps avoid making assumptions and generalisations that might not hold true across cultural boundaries. For instance, many of the comparative studies were compared with Western studies (such as Bandura *et al.*[124]; Kolubinski *et al.*)[109] that do not underpin cultural nuances and local dynamics such as family structures and social norms that are important EAP cultures.[71] Mixed-method studies may be useful for exploring this by combining qualitative and quantitative research techniques to understand the corresponding data while checking the validity of statistical findings.[130] In addition, although some type of RCT study design was used in three studies, there were various limitations, e.g., the intervention period was not specified,[69,70,72] too short[27,72] or yet to be conducted.[71] Robust longitudinal analysis should also be implemented to track current situations and identify trends and changes.

Subpopulations such as LGBTQ+ youth who experience homelessness, also presents a critical avenue for gaining insights into the intersection of cultural and identity dynamics in EAP regions, particularly if these dynamics contribute to pathways to homelessness. This subgroup is a very at-risk population in both the West[131] and the East[132] signifying an urgency for research. For

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example, Confucianism is deeply ingrained in some EAP societies that can shape perceptions of family, community, gender,[133] and perhaps even perceptions of homelessness. From a political perspective, LGBTQ+ youths represent the most fastest growing demographic within South Korea's homeless populations.[134] They face exclusion from certain homeless shelters, thus being deprived of human rights protections and social benefits.[134] Future research working with this subgroup of youth homelessness could identify the potential multi-level barriers these youth encounter when seeking assistance. Not only will it contribute to a more comprehensive understanding of lived experiences of LGBTQ+ youth who experience homelessness, but it could also reduce marginalisation for an already marginalised group in a society where homelessness is heavily stigmatised.[41,42]

The scarcity of published literature (such as government services/programs) concerning the management and policies for youth homelessness in EAP underscores the significance gap in addressing this issue. The lack of documented programs reflects a limited institutional response to the challenges faced by this at-risk population, possibly resulting from varying levels of awareness, available resources, and prioritisation.[68] Nonetheless, the findings of positive mental health, health outcomes and quality of life from mental health interventions and programs for YEH in EAP provide valuable insight for policymakers, which has global relevance to ensure that the Sustainable Development Goals[135] are met for 2030. For instance, evidence-based policies can be developed that are rooted in the specific lived experiences and realities of EAP regions. These could potentially include root causes of youth homelessness, such as family conflict,[27] or economic factors such as being at risk of homelessness.[68] Thus, addressing these potential root causes can allow for a prioritisation of preventative measures.

Lastly, this review emphasises the importance of implementing culturally sensitive services adaptable to the diverse cultural contexts within EAP, such as translating psychological instruments and measures into the country's language,[27,69,70],[72,73] or understanding religious values that are deeply rooted in EAP societies.[67,68] Some implications for practice should highlight the importance of collaborative learning for practitioners dealing with YEH. This fosters a more comprehensive approach to acknowledging the multifaceted challenges these youth experience, which can, in turn enhance, the quality and impact of interventions for this population.

5. Conclusion

Despite the positive mental health outcomes found in this review, a lack of established evidence-based interventions/programs and the existing research gap in EAP underscores the urgent need for comprehensive efforts. A strength of the review lies in its emphasis on tailoring and adapting interventions and programs to suit the socio-cultural contexts of EAP regions, and this review demonstrates its potential to inform future interventions and policy decisions. Tailoring and adapting interventions and programs for socio-cultural contexts can also pave the way for improved services and holistic solutions that address the multifaceted challenges faced by these vulnerable populations. In conclusion, while small steps have been made towards devising effective interventions, programs, and policies, it is evident that there is still significant progress to be made.

Supplementary Materials: Table S1: Definitions, inclusion, and exclusion criteria.; Table S2: Example search terms. Search terms used for Medline.; Figure S1: PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers, and other sources.; Table S3: Summary of study characteristics.; Table S4: Mental health services/programs and outcomes for youth experiencing homelessness.; Table S5: Strengths and limitations of each paper.; Table S6: Three services implemented by the Makassar City Regional.; Table S7: Responsibilities of the KAN.; Appendices S1: Appendix A, Appendix B, Appendix C.

Author Contributions: Conceptualization, K.C.E. and D.M.R.; Methodology, K.C.E. and D.M.R.; Validation, K.C.E. and D.M.R.; Formal Analysis, K.C.E.; Investigation, K.C.E.; Resources, D.M.R.; Writing – Original Draft Preparation, K.C.E.; Writing – Review & Editing, K.C.E. and D.M.R.; Visualization, K.C.E.; Supervision, D.M.R.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	4–5
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	5
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	5
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	5–6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	6
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	8
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	6
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	7–8 (**Table 3**)
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	8 (**Table 4**)
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	6–11 (**Appendix C**)
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	8 (**Table 4**)
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8–12
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	12–13
Limitations	20	Discuss the limitations of the scoping review process.	17
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	18–19
FUNDING			

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SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	20

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews. * Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites. † A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote). ‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting. § The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document). *From:* Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473.

Appendix B

Search terms used

Medline

Category	Search terms
YEH	((homeless* and (child* or youth* or adolescen* or teen* or young person* or young people*)) or street child* or street sleep* or "homeless* youth" or ill-housed person* or rough sleeper* or railway boy* or street dweller* or refugee*) (Homeless persons or Homelessness or Homeless family or Homeless Shelters or Homeless Youth or Homeless single person or "outreach to the homeless" or homeless mentally ill or homeless shelter resident or Homeless Health Concerns) (Runaways or Runaway children or Street Youth)
AND	
Mental health intervention	(mental health service* or therapeutic support* or counselling or counseling or housing program* or temporary shelter* or homeless shelter* or psychological counseling or psychological counselling or short-term temporary care or short-term care or youth homeless* shelter or non government* organisation* or non government* organization* or non-government* organisation* or non-government* organization* or NGO* or mental health care or mental health support* or cognitive behavioural therap* or cognitive behavioral therap* or CBT* or substance abuse therap* or outreach program* or outreach support* or mental health intervention* or mental health* or life counseling or life counselling or overcrowded or refugee* or emergency accommodation* or homeless* facilit* or rehabilitation* or prevention approach* or social work* or therap*)

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	Mental Health Services/ or Child Guidance/ or Community Mental Health Services/ or Counseling/ or Emergency Services, Psychiatric/ or Social Work, Psychiatric/ (health service, mental or health services, mental or hygiene service, mental or hygiene services, mental or mental health service or mental health services or mental hygiene service or mental hygiene services or service, mental health or service, mental hygiene or services, mental health or services, mental hygiene)
AND	
EAP countries	(east asia* pacific or east asia* pacific countr* or cambodia* or china or chinese* or hong kong or indonesia* or japan* or south korea* or lao* pdr or macau or macanese or malaysia* or mongolia* or myanmar or pacific island* or papua new guinea or papuans or philippin* or filipin* or the philippine* or singapore* or taiwan* or thai or timor-leste or vietnam*) exp Cambodia/ or exp Indochina/ or exp Indonesia/ or exp Laos/ or exp Malaysia/ or exp Myanmar/ or exp Philippines/ or exp Singapore/ or exp Thailand/ or exp Timor-Leste/ or exp Vietnam/ or exp China/ or exp Japan/ or exp Korea/ or exp Mongolia/ or exp Taiwan/ or exp Indonesia/ or exp Japan/ or exp Macau/ or exp Philippines/ or exp Taiwan/

Results: 120

PsychInfo

Category	**Search terms**
YEH	((homeless* and (child* or youth* or adolescen* or teen*)) or street child* or street sleep* or ill-housed person* or rough sleep* or street dwell* or railway boy*) (child, homeless or child, street or children, homeless or children, street or homeless child or homeless children or homeless youth or homeless youths or runaway or runaways or street child or street children or street youth or youth, homeless or youth, street or youths, homeless or youths, street)
AND	
Mental health intervention	(mental health service* or therapeutic support* or counselling or counseling or housing program* or temporary shelter* or homeless shelter* or psychological counseling or psychological counselling or short-term temporary care or short-term care or youth homeless* shelter or non government* organisation* or non government* organization* or non-government* organisation* or non-government* organization* or NGO* or mental health care or mental health support* or cognitive behavioural therap* or cognitive behavioral therap* or CBT* or substance abuse therap* or outreach program* or outreach support* or mental health intervention* or mental health* or life counseling or life counselling or overcrowded or centre base* or center base* or emergency

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	accommodation* or homeless* facilit* or food bank* or rehabilitation* or prevention approach* or social work* or therap*) (Rehabilitation Counseling or School Counseling or Aftercare or School Counseling or Mental Health Services or Community Mental Health Services or Early Intervention or Family Intervention or School Based Intervention or Mental Health Programs or Crisis Intervention Services or Hot Line Services or Suicide Prevention Centers or Home Visiting Programs or Suicide Prevention Centers)
AND	
EAP countries	(east asia* pacific or east asia* pacific countr* or cambodia* or china or chinese* or hong kong or indonesia* or japan* or south korea* or lao* pdr or macau or macanese or malaysia* or mongolia* or myanmar or pacific island* or papua new guinea or papuans or philippin* or filipin* or the philippine* or singapore* or taiwan* or thai or timor-leste or vietnam*) (Pacific Islanders or Asia Southeastern or Asia Eastern)

Results: 153

PubMed

Category	**Search terms**
YEH	((((((((((((homeless*)) AND (child*)) OR (youth*)) OR (adolescen*)) OR (teen*)) OR (ill-housed person*)) OR ("homeless teen")) OR ("street sleeper"[tiab:~0])) OR ("children of the street"[tiab:~0])) OR ("street youth")) OR ("runaway* child*")) OR ("runaway* adolescen*")) OR ("street child*")
AND	
Mental health intervention	((((((((((((((((((((((((((((((((((mental health service*) OR (therapeutic support*)) OR (counselling)) OR (counseling)) OR ("housing program*")) OR ("temporary shelter*")) OR ("homeless shelter*")) OR ("psychological counseling")) OR ("psychological counselling")) OR ("temporary care")) OR ("short-term care")) OR ("youth homeless* shelter"[tiab:~10])) OR ("non government* organisation")) OR ("non government* organization")) OR ("non-government* organisation")) OR ("non-government* organization")) OR ("NGO"[tiab])) OR ("mental health care")) OR ("mental health support*")) OR ("cognitive behavioural therap*")) OR ("cognitive behavioral therap*")) OR (CBT[tiab])) OR ("substance abuse therap*")) OR ("outreach program*")) OR ("outreach support*")) OR ("mental health intervention")) OR ("rehabilitation counseling")) OR ("community mental health service*")) OR ("family intervention*")) OR ("mental health program*")) OR ("crisis intervention service*")) OR ("hot line service*")) OR ("suicide prevention center*")) OR (psychotherap*)) OR ("homeless intervention*")
AND	

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EAP countries	((((((((((((((((((((((((((((east asia* pacific) OR (east asia* pacific countr*)) OR (cambodia*)) OR (china)) OR (chinese)) OR (hong kong)) OR (indonesia*)) OR (japan*)) OR (south korea*)) OR (lao* pdr)) OR (macau)) OR (macanese)) OR (malaysia*)) OR (mongolia*)) OR (myanmar)) OR (pacific island*)) OR (papua new guinea)) OR (papuans)) OR (philippin*)) OR ("the philippin*")) OR (filipin*)) OR (singapore*)) OR (taiwan*)) OR (thai)) OR (timor-leste)) OR (vietnam*)) OR ("south-east asia*")) OR ("southeast asia*")) OR ("east asia*")

Results: 2,546

Scopus

Category	Search terms
YEH	"homeless*" OR "homeless* youth" OR "homeless* child*" OR "homeless* adolescen*" OR "homeless* teen" OR " homeless* young person*" OR "homeless* young people*" OR "street child*" OR "street sleeper" OR "homeless* youth" OR "ill-housed person" OR "street youth" OR runaway* OR "runaway youth*" OR "street youth*" OR "rough sleep*" OR "railway boy*" OR "street dwell*" OR "refugee*"
AND	
Mental health intervention	"mental health service*" OR "mental health intervention*" OR "psychological intervention*" OR "therap* support*" OR counseling OR "counselling" OR "psychological counseling" OR "psychological counselling" OR "short-term temporary care" OR "short-term care" OR "youth homeless* shelter" OR "homeless* shelter*" OR "non-government* organisation*" OR "non-governmen* organization" OR NGO* OR "mental health care" OR "mental health support" OR "cognitive behavioural therap*" OR "cognitive behavioral therap*" OR CBT OR "outreach program*" OR "outreach support*" OR "outreach work*" OR "homeless* policy*" OR "homeless* policies" OR "homeless* law*" OR "policies" or "policy" OR "community service*" OR "community mental health service*" OR "emergency service*" OR "family therap*" OR "family intervention*" OR "mental health program*" OR "crisis intervention* service*" OR "hotline service*" OR "school based intervention*" OR "suicide prevention cent*" OR "home visiting program*" OR "community program*" OR "family based intervention*" OR "family based intervention*" OR "emergency accommodation*" OR "homeless* facilit*" OR "food bank*" OR rehabilitation* OR "social work*"
AND	
EAP countries	"east asia* pacific" OR "east asia* pacific countr*" OR cambodia* OR china OR chinese OR "hong kong" OR indonesia* OR japan* or "south korea*" OR "lao* pdr" OR macau OR macanese OR malaysia* OR mongolia* OR myanmar OR "pacific island*" OR "papua new guinea" OR papuans OR philippin* OR "the philippin*" OR filipin* OR singapore* OR taiwan* OR thai* OR "timor-leste" OR viet*

Results: 613

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Web of Science

Category	Search terms
YEH	((((((((((((((((ALL=(homeless*)) AND ALL=(youth*)) OR ALL=(child*)) OR ALL=(adolescen*)) OR ALL=(teen)) OR ALL=("street child*")) OR ALL=("street sleeper")) OR ALL=("ill-housed person*")) OR ALL=("street youth*")) OR ALL=(runaway*)) OR ALL=("runaway youth*")) OR ALL=("homeless youth*")) OR ALL=("rough sleep*")) OR ALL=("railway boy*")) OR ALL=("street dwell*")) OR ALL=("refugee*")) OR ALL=("left behind child*")
AND	
Mental health intervention	((((((((((((((((((((((((((((((((((((ALL=("mental health service*")) OR ALL=("mental health intervention*")) OR ALL=("psychological intervention*")) OR ALL=("therap* support*")) OR ALL=(counseling)) OR ALL=(counselling)) OR ALL=("psychological counseling")) OR ALL=("psychological counselling")) OR ALL=("short-term temporary care")) OR ALL=("short-term care")) OR ALL=("youth homeless* shelter*")) OR ALL=("homeless* shelter")) OR ALL=("non-government* organisation*")) OR ALL=("non-government* organization*")) OR ALL=(NGO*)) OR ALL=("mental health care")) OR ALL=("mental health support*")) OR ALL=("cognitive behavioural therap*")) OR ALL=("cognitive behavioral therap*")) OR ALL=(CBT)) OR ALL=("motivation* interview*")) OR ALL=("substance abuse therap*")) OR ALL=("outreach program*")) OR ALL=("outreach support*")) OR ALL=("outreach work*")) OR ALL=(policy)) OR ALL=("mental health*")) OR ALL=("life counseling")) OR ALL=("life counselling")) OR ALL=("overcrowded")) OR ALL=("centre based")) OR ALL=("center based")) OR ALL=("emergency accommodation")) OR ALL=("homeless* facilit*")) OR ALL=("food bank*")) OR ALL=("rehabilitation*")) OR ALL=("social work*")) OR ALL=("therap*")
AND	
EAP countries	((((((((((((((((((((((((ALL=("east asia* pacific")) OR ALL=("east asia* pacific countr*")) OR ALL=(cambodia*)) OR ALL=(china)) OR ALL=(chinese)) OR ALL=("hong kong")) OR ALL=(indonesia*)) OR ALL=(japan*)) OR ALL=("south korea*")) OR ALL=("lao* pdr")) OR ALL=(macau)) OR ALL=(manganese)) OR ALL=(malaysia*)) OR ALL=(mongolia*)) OR ALL=(myanmar)) OR ALL=("pacific island*")) OR ALL=("papua new guinea")) OR ALL=(papuans)) OR ALL=(philippin*)) OR ALL=("the philippin*")) OR ALL=("filipin*")) OR ALL=(singapore*)) OR ALL=(tawain*)) OR ALL=(thai*)) OR ALL=("timor-leste")) OR ALL=(vietnam*)
Results: 92	

Appendix C

The Critical Appraisal Skills Programme (CASP) checklists

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CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference: Brilliantes-Evangelista (2013) An evaluation of visual arts and poetry as therapeutic interventions with abused adolescents

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes ✔ | Can't Tell | No

HINT: Consider
- what was the goal of the research
- why it was thought important
- its relevance

Comments:
Clear statement of aims, rationale and relevancy.
The goal of the research was to explore the viability of visual arts and poetry as effective interventions for abused adolescents. Child abuse is one of the growing social concerns in the Philippines and there are a number of psychological problems among children and adolescents who have been physically and sexually abused. Art is interwoven in the Filipino culture, yet there are no published local models for the use of arts specific to psychotherapy.

2. Is a qualitative methodology appropriate?

Yes ✔ | Can't Tell | No

HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal

Comments:
Visual arts and poetry intervention sessions explored subjective experiences of the participants by using various means of media, art and modality to illuminate themes such as fears, personal life story, unwanted characteristics, view of the self and of family members. Researcher examined the experiences of participants by looking at their behaviours, artwork and interview responses over the course of the entire sessions. According to the researcher, these were content analysed.

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes ✔ | Can't Tell | No

HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:
Research design appropriate as researcher used quasi-experimental (repeated measures design) for psychopathology symptomatoology pre-test, mid-assessment and post-test and qualitative methodologies for subjective experiences.

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4. Was the recruitment strategy appropriate to the aims of the research?

Yes ✔
Can't Tell
No

HINT: Consider
- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments: Researcher selected participants from shelters around Metro Manila based on the depression and PTSD measures. Researcher did not explain why they chose shelters. However, it seems most appropriate due to its accessibility and population; researcher explained that the participants were physically and sexually abused. Researcher discussed that before the post-test was conducted, four from the control group dropped out, three ran away and one went back to his family.
Control group was a no-treatment group but were given pre- and post-test of the depression and PTSD scales.

5. Was the data collected in a way that addressed the research issue?

Yes ✔
Can't Tell
No

HINT: Consider
- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

Comments: Clear data collection and comprehensive information regarding instruments used. Instruments used (e.g., depression and PTSD rating scales) were translated in Filipino and back translated to ensure consistency of the Filipino version to the original scale. Researcher explained that one item was deleted during pre-test because of a misinterpretation from a test taker.

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6. Has the relationship between researcher and participants been adequately considered?

Yes	☐
Can't Tell	☐
No	✔

HINT: Consider
- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:
Researcher did not critically examine their own role, potential bias and influence during the formulation of research questions and data collection. Researcher did not indicate or mention any events that may have happened during the study.

Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes	☐
Can't Tell	☐
No	✔

HINT: Consider
- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

Comments:
Author did not mention whether approval was sought from the ethics committee. Author did not discuss informed consent or confidentiality in the paper, however, participant names were not included.

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8. Was the data analysis sufficiently rigorous?

Yes ✔
Can't Tell
No

HINT: Consider
- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Comments:
Comprehensive and in-depth description of the analysis process. Clear tables used for PTSD and depression scores for control group, visual arts group and poetry group, pre-test, mid-test and post-test.

Data from poetry and visual arts sessions were content analysed. However, they were not analysed by an art or poetry therapist but by a researcher (a clinical psychologist).

9. Is there a clear statement of findings?

Yes ✔
Can't Tell
No

HINT: Consider whether
- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

Comments:
Clear statement of findings that support the original research question. Adequate discussion of the evidence both for and against with reference to existing literature. Researcher lists study limitations and recommendations for future researches.

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Section C: Will the results help locally?

10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments: Results from visual arts and poetry intervention demonstrates an implication of how we should view psychotherapy. Although alleviating depression and PTSD symptoms may not be guaranteed, these interventions seemed to have been helpful in other ways such as empowering the abused adolescent in having a meaningful existence. Author suggested that psychological healing may not just be removing symptoms of psychopathology, but psychotherapy must be keener in helping individuals have a more meaningful existence and quality of life.
Art and poetry therapy is not institutionalised in the Philippines, thus, visual arts group was not designed by a certified art therapist, and the poetry facilitator was also not a certified poetry therapist. Furthermore, each group only had eight intervention sessions and the author concluded that perhaps more sessions were needed to reduce depression and PTSD symptomatology. This should be considered for future research.

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CASP Randomised Controlled Trial Standard Checklist:
11 questions to help you make sense of a randomised controlled trial (RCT)

Main issues for consideration: Several aspects need to be considered when appraising a randomised controlled trial:

- Is the basic study design valid for a randomised controlled trial? (Section A)
- Was the study methodologically sound? (Section B)
- What are the results? (Section C)
- Will the results help locally? (Section D)

The 11 questions in the checklist are designed to help you think about these aspects systematically.

How to use this appraisal tool: The first three questions (Section A) are screening questions about the validity of the basic study design and can be answered quickly. If, in light of your responses to Section A, you think the study design is valid, continue to Section B to assess whether the study was methodologically sound and if it is worth continuing with the appraisal by answering the remaining questions in Sections C and D.

Record 'Yes', 'No' or 'Can't tell' in response to the questions. Prompts below all but one of the questions highlight the issues it is important to consider. Record the reasons for your answers in the space provided. As CASP checklists were designed to be used as educational/teaching tools in a workshop setting, we do not recommend using a scoring system.

About CASP Checklists: The CASP RCT checklist was originally based on JAMA Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL and Cook DJ), and piloted with healthcare practitioners. This version has been updated taking into account the CONSORT 2010 guideline (http://www.consort-statement.org/consort-2010 accessed 16 September 2020).

Citation: CASP recommends using the Harvard style, i.e., *Critical Appraisal Skills Programme (2021). CASP (insert name of checklist i.e. Randomised Controlled Trial) Checklist. [online] Available at: insert URL. Accessed: insert date accessed.*

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Study and citation: Hyun, Chung & Lee (2005) The effect of cognitive-behavioural group therapy on the self-esteem, depression and self-efficacy of runaway adolescents in a shelter in South Korea

Section A: Is the basic study design valid for a randomised controlled trial?

1. Did the study address a clearly focused research question? *CONSIDER:* ☐ *Was the study designed to assess the outcomes of an intervention?* ☐ *Is the research question 'focused' in terms of:* • *Population studied* • *Intervention given* • *Comparator chosen* • *Outcomes measured?*	Yes ☐ No ☐ Can't tell ☐ Study was designed to assess the effectiveness of cognitive-behavioural group therapy for self-esteem, depression and self-efficacy among runaway adolescents. Research question focused: Population: Male runaway adolescents residing in a shelter Intervention: Cognitive-behavioural group therapy Comparator: Control group pre-test and post-test design Outcomes measured: Self-esteem, depression and self-efficacy
2. Was the assignment of participants to interventions randomised? *CONSIDER:* • *How was randomisation carried out? Was the method appropriate?* • *Was randomisation sufficient to eliminate systematic bias?* • *Was the allocation sequence concealed from investigators and participants?*	Yes ☐ No ☐ Can't tell ☐ Research participants were randomly assigned to the experimental group or the control group.
3. Were all participants who entered the study accounted for at its conclusion? *CONSIDER:* • *Were losses to follow-up and exclusions after randomisation accounted for?* • *Were participants analysed in the study groups to which they were randomised (intention-to-treat analysis)?* • *Was the study stopped early? If so, what was the reason?*	Yes ☐ No ☐ Can't tell ☐ Researcher documented that there were 32 adolescents enrolled in the study, however, five were excluded from the analyses (two in the experimental; three in the experimental) because they left the facility before the post-test.

Section B: Was the study methodologically sound?

4. ☐ **Were the participants 'blind' to intervention they were given?** ☐ **Were the investigators 'blind' to the intervention they were giving to participants?** ☐ **Were the people assessing/analysing outcome/s 'blinded'?**	Yes ☐ ☐ ☐ No ☐ ☐ ☐ Can't tell ☐ ☐ ☐
5. Were the study groups similar at the start of the randomised controlled trial? *CONSIDER:* ☐ *Were the baseline characteristics of each study group (e.g. age, sex, socio-economic group) clearly set out?* ☐ *Were there any differences between the study groups that could affect the outcome/s?*	Yes ☐ No ☐ Can't tell ☐ The researcher explained that the study was conducted in one shelter in South Korea to maintain homogeneity between the experimental and control group. Participants were all male. Baseline characteristics of both control and experimental group in terms of demographic characteristics and pre-test values were set out and compared. Researcher documented no significant differences in self-esteem, depression and self-esteem and basedline characteristics between the experimental and control group.

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6. Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)? *CONSIDER:* ☐ *Was there a clearly defined study protocol?* ☐ *If any additional interventions were given (e.g. tests or treatments), were they similar between the study groups?* ☐ *Were the follow-up intervals the same for each study group?*	Yes ☐ No ☐ Can't tell ☐ Authors noted that all participants were assured they could withdraw from the study at any time and that this would have no effect on their relationship with the staff or on the treatment that they received in the shelter. Subjects in both experimental and control group were assessed for self-esteem, depression and self-efficacy within the same time frames pre-test and post-test. New residents at the shelter were able to participate in the program, and were provided with supplementary sessions to make up for the parts of the CBT program that they had missed.

Section C: What are the results?

7. Were the effects of intervention reported comprehensively? *CONSIDER:* • *Was a power calculation undertaken?* • *What outcomes were measured, and were they clearly specified?* • *How were the results expressed? For binary outcomes, were relative and absolute effects reported?* • *Were the results reported for each outcome in each study group at each follow-up interval?* • *Was there any missing or incomplete data?* • *Was there differential drop-out between the study groups that could affect the results?* • *Were potential sources of bias identified?* • *Which statistical tests were used?* • *Were p values reported?*	Yes ☐ No ☐ Can't tell ☐ Effects of intervention and baseline comparisons both pre-test and post-test were reported comprehensively using clear tables. Homogeneity between the experimental group and the control group in terms of demographics and pre-test values (self-esteem, depression, self-efficacy) were tested using the Fisher's Exact probability and the Mann-Whitney U test. For the effects of CBT on self-esteem, depression and self-efficacy, the Wilcoxon signed rank test was used. P values were reported as well as standard deviations. No data was incomplete or missing. Participants who enrolled but subsequently dropped out of the study before post-test were excluded from analyses. Therefore, these would not have affected the results.
8. Was the precision of the estimate of the intervention or treatment effect reported? *CONSIDER:* • *Were confidence intervals (CIs) reported?*	Yes ☐ No ☐ Can't tell ☐ CIs were not reported.
9. Do the benefits of the experimental intervention outweigh the harms and costs? *CONSIDER:* ☐ *What was the size of the intervention or treatment effect?* ☐ *Were harms or unintended effects reported for each study group?* ☐ *Was a cost-effectiveness analysis undertaken? (Cost-effectiveness analysis allows a comparison to be made between different interventions used in the care of the same condition or problem.)*	Yes ☐ No ☐ Can't tell ☐ Intervention group received eight weekly sessions of the treatment program. Small number of subjects were selected. Sample size in this study was not large enough to permit the assumption of normality on the study variables. However, the nonparametric test was used. Harms or unintended effects were not reported for each study group; a cost-effectiveness analysis was not undertaken.

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Section D: Will the results help locally?	
10. **Can the results be applied to your local population/in your context?** *CONSIDER:* • *Are the study participants similar to the people in your care?* • *Would any differences between your population and the study participants alter the outcomes reported in the study?* • *Are the outcomes important to your population?* • *Are there any outcomes you would have wanted information on that have not been studied or reported?* • *Are there any limitations of the study that would affect your decision?*	Yes ☐ No ☐ Can't tell ☐ Populations in Hyun, Chun and Lee's (2005) study and my systematic review were both youth experiencing homelessness. The authors only recruited male participants. This is a limitation, however, the results from this study are beneficial for the systematic review's findings on different mental health services for this population. It would be interesting to see if there were differences in male and female treatment responses.
11. **Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?** *CONSIDER:* ☐ *What resources are needed to introduce this intervention taking into account time, finances, and skills development or training needs?* ☐ *Are you able to disinvest resources in one or more existing interventions in order to be able to re-invest in the new intervention?*	Yes ☐ No ☐ Can't tell ☐ Recruiting youth experiencing homelessness in the West would be particularly difficult, and would probably require looking into shelters and/or care homes just as the authors did. It would require multidisciplinary collaboration and stakeholders for CBT interventions.

APPRAISAL SUMMARY: *Record key points from your critical appraisal in this box. What is your conclusion about the paper? Would you use it to change your practice or to recommend changes to care/interventions used by your organisation? Could you judiciously implement this intervention without delay?*

This is a comprehensive paper that clearly states the psychological issues of youth homelessness or runaway adolescents, why intervention is important for this population and the effects of CBT on self-esteem, depression and self-efficacy. This study demonstrated that CBT is an effective intervention for youth experiencing homelessness, as it decreased depression symptomatology and increased self-efficacy among participants.

The CBT developed in the study is deemed suitable for application to similar populations within the East Asia Pacific regions, suggesting potential benefits for addressing psychological issues among youth in this area. However, implementing this intervention in Western contexts may pose challenges due to cultural differences, indicating potential barriers to its effectiveness or acceptance in Western settings.

Female participants should be conducted in future research.

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CASP Checklist: 11 questions to help you make sense of a Case Control Study

How to use this appraisal tool: Three broad issues need to be considered when appraising a case control study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 11 questions on the following pages are designed to help you think about these issues systematically. The first three questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

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Paper for appraisal and reference: Miles (2000) Drawing together hope: 'listening' to militarised children

Section A: Are the results of the trial valid?

1. Did the study address a clearly focused issue?

Yes ✔
Can't Tell
No

HINT: An issue can be 'focused' In terms of
- the population studied
- Whether the study tried to detect a beneficial or harmful effect
- the risk factors studied

Comments:

The research population studied was focused. The focus was on orphaned refugee and militarised children and how art is used as a tool in understanding the child's view of self and hope for the future.

2. Did the authors use an appropriate method to answer their question?

Yes ✔
Can't Tell
No

HINT: Consider
- Is a case control study an appropriate way of answering the question under the circumstances
- Did it address the study question

Comments:

Case control is appropriate considering the nature of the participants in the study. It addresses the research question.

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Is it worth continuing?

3. Were the cases recruited in an acceptable way?

Yes ✔
Can't Tell
No

Comments:

Not a lot of cases have been conducted on orphaned militarised children which is what makes this case special. These children are a distinct, and at-risk population.

HINT: We are looking for selection bias which might compromise validity of the findings

- are the cases defined precisely
- were the cases representative of a defined population (geographically and/or temporally)
- was there an established reliable system for selecting all the cases
- are they incident or prevalent
- is there something special about the cases
- is the time frame of the study relevant to disease/exposure
- was there a sufficient number of cases selected
- was there a power calculation

4. Were the controls selected in an acceptable way?

Yes
Can't Tell ✔
No

Comments:

Participants were recruited in a somewhat acceptable way considering the location. Participants were representative of a defined population (orphaned militarised children) in South East Asia in military centres.

Rather than focusing on counselling over the traumas of the past, the researcher focused on children's perception of hope for the future of themselves.

Participants were invited to participate and they all did. Sample size was 60: 52 boys and 8 girls, aged 9-16 years.

Translators were the children's teachers who were also refugees in the military centres - potential bias or mistranslation.

HINT: We are looking for selection bias which might compromise the generalisability of the findings

- were the controls representative of the defined population (geographically and/or temporally)
- was there something special about the controls
- was the non-response high, could non-respondents be different in any way
- are they matched, population based or randomly selected
- was there a sufficient number of controls selected

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5. Was the exposure accurately measured to minimise bias?

Yes ☐
Can't Tell ☑
No ☐

HINT: We are looking for measurement, recall or classification bias
- was the exposure clearly defined and accurately measured
- did the authors use subjective or objective measurements
- do the measures truly reflect what they are supposed to measure (have they been validated)
- were the measurement methods similar in the cases and controls
- did the study incorporate blinding where feasible
- is the temporal relation correct (does the exposure of interest precede the outcome)

Comments:

Art was used as a tool to understand the child's subjective view of themselves and hope for the future. Children were free to draw whatever they wanted and were individually asked to explain what they had drawn.

This child-centred approach used subjective measures. However, this may not truly reflect what they are supposed to measure (how they view themselves; hope for the future) because children's vocabulary is limited according to their age and ability, thus, open to misinterpretation.

6. (a) Aside from the experimental intervention, were the groups treated equally?

HINT: List the ones you think might be important, that the author may have missed
- genetic
- environmental
- socio-economic

List:

Not applicable.

6. (b) Have the authors taken account of the potential confounding factors in the design and/or in their analysis?

Yes ☑
Can't Tell ☐
No ☐

HINT: Look for
- restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

Comments:

The author had taken into account potential confounding factors such as art and language misinterpretation.

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Section B: What are the results?

7. How large was the treatment effect?

HINT: Consider
- what are the bottom line results
- is the analysis appropriate to the design
- how strong is the association between exposure and outcome (look at the odds ratio)
- are the results adjusted for confounding, and might confounding still explain the association
- has adjustment made a big difference to the OR

Comments:

The author states that art was a useful tool to opening up communication between children and adults.

8. How precise was the estimate of the treatment effect?

HINT: Consider
- size of the p-value
- size of the confidence intervals
- have the authors considered all the important variables
- how was the effect of subjects refusing to participate evaluated

Comments:

Author did not consider risks associated with being orphaned and militarised children such as psychopathology. These could have affected the way the children drew hope for the future and/or view of the self.

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9. Do you believe the results?

Yes ☑
No ☐

HINT: Consider
- big effect is hard to ignore!
- Can it be due to chance, bias, or confounding
- are the design and methods of this study sufficiently flawed to make the results unreliable
- consider Bradford Hills criteria (e.g. time sequence, does-response gradient, strength, biological plausibility)

Comments:
Orphaned militarised children are a distinct and at-risk population. This study could have been conducted better but considering the nature of the population, location and lack of resources and funding the author had, the results illustrated the importance of art in understanding a child's mind. This could inform future research and practice; further research should be conducted on orphaned militarised children.

Section C: Will the results help locally?

10. Can the results be applied to the local population?

Yes ☑
Can't Tell ☐
No ☐

HINT: Consider whether
- the subjects covered in the study could be sufficiently different from your population to cause concern
- your local setting is likely to differ much from that of the study
- can you quantify the local benefits and harms

Comments:
The results will help inform my systematic review. However, it is important to note that these results are outdated.

11. Do the results of this study fit with other available evidence?

Yes ☑
Can't Tell ☐
No ☐

HINT: Consider
- all the available evidence from RCT's Systematic Reviews, Cohort Studies, and Case Control Studies as well, for consistency

Comments:
The author discusses the contribution the study makes to existing literature and knowledge for consistency.

Remember One observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making. However, for certain questions observational studies provide the only evidence. Recommendations from observational studies are always stronger when supported by other evidence.

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CASP Randomised Controlled Trial Standard Checklist:
11 questions to help you make sense of a randomised controlled trial (RCT)

Main issues for consideration: Several aspects need to be considered when appraising a randomised controlled trial:

- Is the basic study design valid for a randomised controlled trial? (Section A)
- Was the study methodologically sound? (Section B)
- What are the results? (Section C)
- Will the results help locally? (Section D)

The 11 questions in the checklist are designed to help you think about these aspects systematically.

How to use this appraisal tool: The first three questions (Section A) are screening questions about the validity of the basic study design and can be answered quickly. If, in light of your responses to Section A, you think the study design is valid, continue to Section B to assess whether the study was methodologically sound and if it is worth continuing with the appraisal by answering the remaining questions in Sections C and D.

Record 'Yes', 'No' or 'Can't tell' in response to the questions. Prompts below all but one of the questions highlight the issues it is important to consider. Record the reasons for your answers in the space provided. As CASP checklists were designed to be used as educational/teaching tools in a workshop setting, we do not recommend using a scoring system.

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Study and citation: Mohammadzadeh et al. (2019) Improving emotional health and self-esteem of Malaysian Adolescents living in orphanages through Life Skills Education program: A multi-centred randomised control trial……

Section A: Is the basic study design valid for a randomised controlled trial?

1.	**Did the study address a clearly focused research question?** *CONSIDER:* ☐ *Was the study designed to assess the outcomes of an intervention?* ☐ *Is the research question 'focused' in terms of:* • *Population studied* • *Intervention given* • *Comparator chosen* • *Outcomes measured?*	Yes ☐ No ☐ Can't tell ☐ The study was designed to assess Life Skills Education (LSE) in improving emotional health and self-esteem for orphaned/ institutionalised adolescents. The research question was focused in terms of: Population: Malaysian adolescents living in orphanages Intervention: Life-skills based intervention (Life Skills Education program) Comparator: Control group pre-test, post-test and follow-up tests Outcomes measured: Depression, anxiety, stress and self-esteem
2.	**Was the assignment of participants to interventions randomised?** *CONSIDER:* • *How was randomisation carried out? Was the method appropriate?* • *Was randomisation sufficient to eliminate systematic bias?* • *Was the allocation sequence concealed from investigators and participants?*	Yes ☐ No ☐ Can't tell ☐ Participants were randomly divided into intervention and the placebo control group. Orphanages were randomly selected using Microsoft Excel software.
3.	**Were all participants who entered the study accounted for at its conclusion?** *CONSIDER:* • *Were losses to follow-up and exclusions after randomisation accounted for?* • *Were participants analysed in the study groups to which they were randomised (intention-to-treat analysis)?* • *Was the study stopped early? If so, what was the reason?*	Yes ☐ No ☐ Can't tell ☐ The authors did not document attrition during the intervention period, post-test or follow-up. However, the authors used intention-to-treat strategy for missing data to determine the amount of distribution of missing values. Little's MCAR test revealed that 2.9% of the data was missing at random, and values were imputed using the expectation-maximisation method with importance resembling using SPSS 21.

Section B: Was the study methodologically sound?

4.	☐ **Were the participants 'blind' to intervention they were given?** ☐ **Were the investigators 'blind' to the intervention they were giving to participants?** ☐ **Were the people assessing/analysing outcome/s 'blinded'?**	Yes ☐ ☐ ☐ No ☐ ☐ ☐ Can't tell ☐ ☐ ☐
5.	**Were the study groups similar at the start of the randomised controlled trial?** *CONSIDER:* ☐ *Were the baseline characteristics of each study group (e.g. age, sex, socio-economic group) clearly set out?* ☐ *Were there any differences between the study groups that could affect the outcome/s?*	Yes ☐ No ☐ Can't tell ☐ Baseline characteristics were clearly set out. Authors used a Demographic Questionnaire which included socio-demographic characteristics of participants, age, gender, race, educational level, parental status and duration of living in an orphanage(s). 149 male participants (55%); 122 females (45%). A majority of the participants were residing in orphanages for more than 2 years (54.6%).

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6. Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)? *CONSIDER:* ☐ *Was there a clearly defined study protocol?* ☐ *If any additional interventions were given (e.g. tests or treatments), were they similar between the study groups?* ☐ *Were the follow-up intervals the same for each study group?*	Yes ☐ No ☐ Can't tell ☐ Control group received six sessions of the Communication for Behavioural Impact program for preventing dengue. Pre-test, post-test and follow-up test were performed for the control group, which was the same as the intervention group. Educational sessions for the control group was shorter than the participants receiving intervention.

Section C: What are the results?

7. Were the effects of intervention reported comprehensively? *CONSIDER:* • *Was a power calculation undertaken?* • *What outcomes were measured, and were they clearly specified?* • *How were the results expressed? For binary outcomes, were relative and absolute effects reported?* • *Were the results reported for each outcome in each study group at each follow-up interval?* • *Was there any missing or incomplete data?* • *Was there differential drop-out between the study groups that could affect the results?* • *Were potential sources of bias identified?* • *Which statistical tests were used?* • *Were p values reported?*	Yes ☐ No ☐ Can't tell ☐ Effects of intervention were reported comprehensively using clear tables and diagrams. Tables compare the holistic mean difference between intervention and control groups at pre-test, post-test and follow-up test for depression, anxiety, stress and self-esteem variables. Author also compared the differences in the mean scores between variables between time points in the intervention and control groups, as well as descriptive statistics of emotional problems and self-esteem scores at three different time points for intervention and control group. There were 2.9% of missing data in the study but the author concluded that they were missing at random after performing the Little MCAR test. The authors conducted ANOVA within- and between-subjects effects for interventions effects for emotional problems and self-esteem. A post hoc test (Bonferroni test between groups) was applied to compare the mean scores of variables. The level of significance (P-value) was reported at 0.05 and 0.02 (0.05/3) for adjusted P-value
8. Was the precision of the estimate of the intervention or treatment effect reported? *CONSIDER:* • *Were confidence intervals (CIs) reported?*	Yes ☐ No ☐ Can't tell ☐ Confidence intervals were reported and the CI was 95%.
9. Do the benefits of the experimental intervention outweigh the harms and costs? *CONSIDER:* ☐ *What was the size of the intervention or treatment effect?* ☐ *Were harms or unintended effects reported for each study group?* ☐ *Was a cost-effectiveness analysis undertaken? (Cost-effectiveness analysis allows a comparison to be made between different interventions used in the care of the same condition or problem.)*	Yes ☐ No ☐ Can't tell ☐ The results of the post hoc test revealed a significant difference between pre-test and post-test for depression, anxiety, stress and self-esteem, with a large effect size in the intervention group. Harms or unintended effects were not reported. Cost-effectiveness analysis was not undertaken.

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Section D: Will the results help locally?	
10. **Can the results be applied to your local population/in your context?** *CONSIDER:* • *Are the study participants similar to the people in your care?* • *Would any differences between your population and the study participants alter the outcomes reported in the study?* • *Are the outcomes important to your population?* • *Are there any outcomes you would have wanted information on that have not been studied or reported?* • *Are there any limitations of the study that would affect your decision?*	Yes ☐ No ☐ Can't tell ☐ These results can definitely be applied to the local population. The findings of the study could be used by local Malaysian educational planners and educational managers to design and implement continuous programs based on Life Skills Education for institutionalised and even non-institutionalised Malaysian children and adolescents to improve public health in the country. One limitation of the study that would affect the current systematic review is that the study instruments assessing depression, anxiety, stress and self-esteem were self-administered. Thus, there could be potential social desirability bias or misunderstanding which challenges the validity of the findings.
11. **Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?** *CONSIDER:* ☐ *What resources are needed to introduce this intervention taking into account time, finances, and skills development or training needs?* ☐ *Are you able to disinvest resources in one or more existing interventions in order to be able to re-invest in the new intervention?*	Yes ☐ No ☐ Can't tell ☐ Authors noted that Life Skills Education is a cost-effective program and easy to administer by local trainers without requiring specific tools.

APPRAISAL SUMMARY: *Record key points from your critical appraisal in this box. What is your conclusion about the paper? Would you use it to change your practice or to recommend changes to care/interventions used by your organisation? Could you judiciously implement this intervention without delay?*

Good rationale and research question. In-depth and comprehensive data collection, ethical consideration, data analysis and discussion. Life Skills Education program can be applied to local populations and can inform policy and practice in Western countries for youth homelessness as this program is based on life skills.

The Life Skills program was developed by the World Health Organisation through a consultation with WHO and UNICEF experts in the study field, and would have no doubt that this could be implemented in future practice without delay considering LSE's cost-effectiveness and easy administration by local trainers without using specific tools. For future researches on the effectiveness of LSE for emotional problems and self-esteem among adolescents in orphanages, self-administered questionnaires on depression, anxiety, stress and self-esteem should be re-evaluated. This will serve as a means of assessing the reliability of the participants' reported emotional problems.

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CASP Checklist: 11 questions to help you make sense of a Case Control Study

How to use this appraisal tool: Three broad issues need to be considered when appraising a case control study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 11 questions on the following pages are designed to help you think about these issues systematically. The first three questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Case Control Study) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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CASP Critical Appraisal Skills Programme

Paper for appraisal and reference: Noh (2018) The effect of a resilience enhancement programme for female runaway youths: A Quasi-Experimental Study

Section A: Are the results of the trial valid?

1. Did the study address a clearly focused issue?

Yes ✔ Can't Tell ☐ No ☐

HINT: An issue can be 'focused' In terms of
- the population studied
- Whether the study tried to detect a beneficial or harmful effect
- the risk factors studied

Comments:
The study addressed a clearly focused issue: The effects of a resilience enhancement program on resilience, depression, anxiety, and problem drinking among female runaway youths residing in shelters in South Korea.

2. Did the authors use an appropriate method to answer their question?

Yes ✔ Can't Tell ☐ No ☐

HINT: Consider
- Is a case control study an appropriate way of answering the question under the circumstances
- Did it address the study question

Comments:
Author used a quasi-experimental design in addressing research question. This is appropriate because author may not have full control over the assignment of participants to experimental groups in shelters; a quasi-experimental design allows for more practical approach. The study design was well suited for naturalistic environments and for studying interventions in real-world settings, and it may not be ethical to manipulate variables or assign participants randomly.

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Is it worth continuing?

3. Were the cases recruited in an acceptable way?

Yes ✔
Can't Tell
No

Comments:

Participants were recruited from five shelters for female runaways youths in South Korea and were representative of this population. Participants were recruited after the principal investigator (PI) explained the aim of the research to shelter residents.

Ethical considerations were reported. Both experimental and control participants were given gift certificates upon completing all three rounds of data collection.

Sample size was calculated using G*Power version 3.1.3. The study needed to obtain 80% statistical power for repeated measures with an alpha level of 0.05 and an effect size of 0.25. The estimated sample needed was 28 and the sample size of the study was n = 32, thus, the sample size was considered sufficient for the study.

HINT: We are looking for selection bias which might compromise validity of the findings

- are the cases defined precisely
- were the cases representative of a defined population (geographically and/or temporally)
- was there an established reliable system for selecting all the cases
- are they incident or prevalent
- is there something special about the cases
- is the time frame of the study relevant to disease/exposure
- was there a sufficient number of cases selected
- was there a power calculation

4. Were the controls selected in an acceptable way?

Yes ✔
Can't Tell
No

Comments:

Controls were matched: They were also runaway adolescents living in shelters; therefore, representative of the defined population. PI recruited equal participants for the intervention group (n = 16) and control group (n = 16).

Overall sample size for the study was sufficient and was calculated using G*Power version 3.1.3.

HINT: We are looking for selection bias which might compromise the generalisability of the findings

- were the controls representative of the defined population (geographically and/or temporally)
- was there something special about the controls
- was the non-response high, could non-respondents be different in any way
- are they matched, population based or randomly selected
- was there a sufficient number of controls selected

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5. Was the exposure accurately measured to minimise bias?

Yes	
Can't Tell	✔
No	

HINT: We are looking for measurement, recall or classification bias
- was the exposure clearly defined and accurately measured
- did the authors use subjective or objective measurements
- do the measures truly reflect what they are supposed to measure (have they been validated)
- were the measurement methods similar in the cases and controls
- did the study incorporate blinding where feasible
- is the temporal relation correct (does the exposure of interest precede the outcome)

Comments:

Author used subjective measures by using self-administered questionnaires on dependant variables (resilience, depression, anxiety, and problem drinking) and background variables (age, education level, family socioeconomic status, number of runaway episodes; the amount of time spend not at home or in a shelter, length of residence time in the current shelter, and family dunction.

Measures used Korean instruments and translations of Western instruments. This reduced minsunderstanding and misinterpretation among participants.

6. (a) Aside from the experimental intervention, were the groups treated equally?

HINT: List the ones you think might be important, that the author may have missed
- genetic
- environmental
- socio-economic

List:

Groups were treated equally. At baseline, the experimental group and control group did not differ in general characteristics and family function. Both groups were assessed at pre-test, post-test and at a one-month follow-up.

6. (b) Have the authors taken account of the potential confounding factors in the design and/or in their analysis?

Yes	✔
Can't Tell	
No	

HINT: Look for
- restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

Comments:

A potential confounding factor the author noted was that since the control and experimental group were living in the same shelter, intervention participants might disseminate the contents of the programme to the control participants. However, to avoid treatment contamination between experimental and control participants, the study employed a non-equivalent control group non-synchronised design, in which data collection for the control group was conducted and completed prior to the experimental group.

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Section B: What are the results?

7. How large was the treatment effect?

HINT: Consider
- what are the bottom line results
- is the analysis appropriate to the design
- how strong is the association between exposure and outcome (look at the odds ratio)
- are the results adjusted for confounding, and might confounding still explain the association
- has adjustment made a big difference to the OR

Comments:

The analysis was appropriate to discuss research question. Significant group-by-time interaction effects for resilience, anxiety, and problem drinking at one-month follow-up. Significant decrease in depression for experimental participants occurred during the one-month intervention period, but not during the overall study period, because decreases in depression over the study period occurred for both control and experimental participants,

8. How precise was the estimate of the treatment effect?

HINT: Consider
- size of the p-value
- size of the confidence intervals
- have the authors considered all the important variables
- how was the effect of subjects refusing to participate evaluated

Comments:

PI did not document confidence intervals.

P value for resilience between pre-test and both post-test was 0.002 and 0.007 at a one-month follow-up. Depression at pre-test and post-test was p = 0.037. Anxiety at pre-, post- and follow-up test was p = 0.022. For problem drinking, p value was p = 0.001 at pre- and post-test and 0.038 at follow-up. The size of p values across variables and interval times provided evidence in support of a true intervention effect.

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9. Do you believe the results?

Yes ☑
No ☐

HINT: Consider
- big effect is hard to ignore!
- Can it be due to chance, bias, or confounding
- are the design and methods of this study sufficiently flawed to make the results unreliable
- consider Bradford Hills criteria (e.g. time sequence, does-response gradient, strength, biological plausibility)

Comments:
The small p-value suggests that the Resilience Enhancement Programme on dependant variables was unlikely to occur by random chance alone.

Section C: Will the results help locally?

10. Can the results be applied to the local population?

Yes ☑
Can't Tell ☐
No ☐

HINT: Consider whether
- the subjects covered in the study could be sufficiently different from your population to cause concern
- your local setting is likely to differ much from that of the study
- can you quantify the local benefits and harms

Comments:
The Resilient Enhancement Programme developed by the PI can be used locally for South Korean runaway adolescents. Although these are just preliminary results, these findings will help inform future researches and practice.

11. Do the results of this study fit with other available evidence?

Yes ☑
Can't Tell ☐
No ☐

HINT: Consider
- all the available evidence from RCT's Systematic Reviews, Cohort Studies, and Case Control Studies as well, for consistency

Comments:
The results for the study informs future research and practice in terms of the differences in mental health status for female runaway adolescents. These results further contributes to and enhance existing literature on the characteristics and risks associated with female runaway youth.

Remember One observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making. However, for certain questions observational studies provide the only evidence. Recommendations from observational studies are always stronger when supported by other evidence.

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CASP Randomised Controlled Trial Standard Checklist:
11 questions to help you make sense of a randomised controlled trial (RCT)

Main issues for consideration: Several aspects need to be considered when appraising a randomised controlled trial:

- Is the basic study design valid for a randomised controlled trial? (Section A)
- Was the study methodologically sound? (Section B)
- What are the results? (Section C)
- Will the results help locally? (Section D)

The 11 questions in the checklist are designed to help you think about these aspects systematically.

How to use this appraisal tool: The first three questions (Section A) are screening questions about the validity of the basic study design and can be answered quickly. If, in light of your responses to Section A, you think the study design is valid, continue to Section B to assess whether the study was methodologically sound and if it is worth continuing with the appraisal by answering the remaining questions in Sections C and D.

Record 'Yes', 'No' or 'Can't tell' in response to the questions. Prompts below all but one of the questions highlight the issues it is important to consider. Record the reasons for your answers in the space provided. As CASP checklists were designed to be used as educational/teaching tools in a workshop setting, we do not recommend using a scoring system.

About CASP Checklists: The CASP RCT checklist was originally based on JAMA Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL and Cook DJ), and piloted with healthcare practitioners. This version has been updated taking into account the CONSORT 2010 guideline (http://www.consort-statement.org/consort-2010 accessed 16 September 2020).

Citation: CASP recommends using the Harvard style, i.e., *Critical Appraisal Skills Programme (2021). CASP (insert name of checklist i.e. Randomised Controlled Trial) Checklist. [online] Available at: insert URL. Accessed: insert date accessed.*

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Study and citation: Noh & Choi (2020) Development of a Family-Based Mental Health Program for Runaway Adolescents Using an Intervention Mapping Protocol

Section A: Is the basic study design valid for a randomised controlled trial?

1. Did the study address a clearly focused research question? *CONSIDER:* ☐ *Was the study designed to assess the outcomes of an intervention?* ☐ *Is the research question 'focused' in terms of:* • *Population studied* • *Intervention given* • *Comparator chosen* • *Outcomes measured?*	Yes ☐ No ☐ Can't tell ☐ The authors developed a mental health program and planned to use a RCT to evaluate the effects of the program on improving adolescents' mental health status and perceived family functioning. An RCT was not and has not been conducted to evaluate the program, up to this present day. However, interviews with adolescents living in shelters were conducted using purposive sampling so they could develop a program based on their lived experiences. The research question was focused in terms of: Population: Runaway adolescents Intervention: Family-based mental health program Comparators: Comparison group once intervention has been implemented Outcomes measured: Behavioural outcomes and environmental outcomes
2. Was the assignment of participants to interventions randomised? *CONSIDER:* • *How was randomisation carried out? Was the method appropriate?* • *Was randomisation sufficient to eliminate systematic bias?* • *Was the allocation sequence concealed from investigators and participants?*	Yes ☐ No ☐ Can't tell ☐ Researchers plan to divide experimental and control groups via a computer-generated random allocation after they conduct an RCT to evaluate the program.
3. Were all participants who entered the study accounted for at its conclusion? *CONSIDER:* • *Were losses to follow-up and exclusions after randomisation accounted for?* • *Were participants analysed in the study groups to which they were randomised (intention-to-treat analysis)?* • *Was the study stopped early? If so, what was the reason?*	Yes ☐ No ☐ Can't tell ☐ Program not yet evaluated.

Section B: Was the study methodologically sound?

4. ☐ **Were the participants 'blind' to intervention they were given?** ☐ **Were the investigators 'blind' to the intervention they were giving to participants?** ☐ **Were the people assessing/analysing outcome/s 'blinded'?**	Yes ☐ ☐ ☐ No ☐ ☐ ☐ Can't tell ☐ ☐ ☐
5. Were the study groups similar at the start of the randomised controlled trial? *CONSIDER:* ☐ *Were the baseline characteristics of each study group (e.g. age, sex, socio-economic group) clearly set out?* ☐ *Were there any differences between the study groups that could affect the outcome/s?*	Yes ☐ No ☐ Can't tell ☐ Despite an absence of an RCT to evaluate the program, the authors specified the baseline characteristics they plan to recruit for participants, as well as the exclusion criteria.

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6. Apart from the experimental intervention, did each study group receive the same level of care (that is, were they treated equally)? *CONSIDER:* ☐ *Was there a clearly defined study protocol?* ☐ *If any additional interventions were given (e.g. tests or treatments), were they similar between the study groups?* ☐ *Were the follow-up intervals the same for each study group?*	Yes ☐ No ☐ Can't tell ☐ Program not yet evaluated. However, the researchers plan to collect participants' data using self-administered questionnaire surveys. Assessment time points will include baseline, immediately after the program and one month after program completion.

Section C: What are the results?

7. Were the effects of intervention reported comprehensively? *CONSIDER:* • *Was a power calculation undertaken?* • *What outcomes were measured, and were they clearly specified?* • *How were the results expressed? For binary outcomes, were relative and absolute effects reported?* • *Were the results reported for each outcome in each study group at each follow-up interval?* • *Was there any missing or incomplete data?* • *Was there differential drop-out between the study groups that could affect the results?* • *Were potential sources of bias identified?* • *Which statistical tests were used?* • *Were p values reported?*	Yes ☐ No ☐ Can't tell ☐ Program not yet evaluated to test its effectiveness. No data present in this paper. Statistical outcomes were not clearly specified. Researchers plan to analyse future data using IBM SPSS, version 26.0. Intervention effects will be examined using a one-way repeated measures MANOVA. A power analysis conducted using the G* Power program indicated that a total sample of 211 subjects would be needed to detect a medium effect (f = 0.25) with 80% power using MANOVA at an alpha level 0.05. Therefore, researchers will collect data from n = 236 participants (experimental: n = 118; comparison: n = 188) to accommodate the expected attrition of 10% over the three-month period from the baseline assessment to the final evaluation.
8. Was the precision of the estimate of the intervention or treatment effect reported? *CONSIDER:* • *Were confidence intervals (CIs) reported?*	Yes ☐ No ☐ Can't tell ☐ Program not yet evaluated to test its effectiveness. Therefore, CI has not been reported.
9. Do the benefits of the experimental intervention outweigh the harms and costs? *CONSIDER:* ☐ *What was the size of the intervention or treatment effect?* ☐ *Were harms or unintended effects reported for each study group?* ☐ *Was a cost-effectiveness analysis undertaken? (Cost-effectiveness analysis allows a comparison to be made between different interventions used in the care of the same condition or problem.)*	Yes ☐ No ☐ Can't tell ☐ Program not yet evaluated to test its effectiveness; no data present to see the size of intervention of treatment effect.

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Section D: Will the results help locally?	
10. **Can the results be applied to your local population/in your context?** *CONSIDER:* • *Are the study participants similar to the people in your care?* • *Would any differences between your population and the study participants alter the outcomes reported in the study?* • *Are the outcomes important to your population?* • *Are there any outcomes you would have wanted information on that have not been studied or reported?* • *Are there any limitations of the study that would affect your decision?*	Yes ☐ No ☐ Can't tell ☐ The development of a family-based mental health program for runaway adolescents can be applied to local populations (South Korea) as there was an emphasis on involving families during interventions.
11. **Would the experimental intervention provide greater value to the people in your care than any of the existing interventions?** *CONSIDER:* ☐ *What resources are needed to introduce this intervention taking into account time, finances, and skills development or training needs?* ☐ *Are you able to disinvest resources in one or more existing interventions in order to be able to re-invest in the new intervention?*	Yes ☐ No ☐ Can't tell ☐ This program would require a lot of multidisciplinary collaboration and training. It would also require some modification as the program was developed by interviewing the lived experiences of sheltered adolescents in South Korea.

APPRAISAL SUMMARY: *Record key points from your critical appraisal in this box. What is your conclusion about the paper? Would you use it to change your practice or to recommend changes to care/interventions used by your organisation? Could you judiciously implement this intervention without delay?*

Good rationale and basis for the development of a program. Comprehensive program development. Focused on the lived experiences of South Korean adolescents living in shelters. Strong focus on family.

However, data on the outcomes of intervention effect would have been beneficial in providing insight into whether the program is achieving its intended goals. This would enable informed decision-making regarding the continuation/modification/termination of the program. Outcomes could also contribute to evidence-based practice. The authors of the paper should evaluate the effectiveness of the program in the near future.

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CASP Checklist: 12 questions to help you make sense of a **Cohort Study**

How to use this appraisal tool: Three broad issues need to be considered when appraising a cohort study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 12 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Cohort Study) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference: Sarmini & Sukartiningsih (2018) From the Road to the Arena: The Role of Kampung Anak Negeri for Street Children

Section A: Are the results of the study valid?

1. Did the study address a clearly focused issue?

Yes ✔
Can't Tell
No

HINT: A question can be 'focused' in terms of
- the population studied
- the risk factors studied
- is it clear whether the study tried to detect a beneficial or harmful effect
- the outcomes considered

Comments:

Research question focused in terms of population studied (street children) and the risks associated with being a street child. Findings are valid and explored the beneficial role of the program 'Kampung Anak Negeri' (KAN) in helping street children.

2. Was the cohort recruited in an acceptable way?

Yes ✔
Can't Tell
No

HINT: Look for selection bias which might compromise the generalisability of the findings:
- was the cohort representative of a defined population
- was there something special about the cohort
- was everybody included who should have been

Comments:

Cohort were representative of the focused population. Participants in the study were street children who were placed in the Children's Village.

Is it worth continuing?

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3. Was the exposure accurately measured to minimise bias?

Yes	✔
Can't Tell	
No	

HINT: Look for measurement or classification bias:
- did they use subjective or objective measurements
- do the measurements truly reflect what you want them to (have they been validated)
- were all the subjects classified into exposure groups using the same procedure

Comments:
The 'exposure' in this study was the involvement or participation of street children in KAN. Data collection used both subjective and objective measurements: observation methods and in-depth interviews.

These reflect the role of KAN, which answers the research question.

4. Was the outcome accurately measured to minimise bias?

Yes	
Can't Tell	✔
No	

HINT: Look for measurement or classification bias:
- did they use subjective or objective measurements
- do the measurements truly reflect what you want them to (have they been validated)
- has a reliable system been established for detecting all the cases (for measuring disease occurrence)
- were the measurement methods similar in the different groups
- were the subjects and/or the outcome assessor blinded to exposure (does this matter)

Comments:
The role of this paper was to explore the five roles of KAN and the authors did not assess or validate the program's effectiveness through measurement.

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5. (a) Have the authors identified all important confounding factors?

Yes	
Can't Tell	
No	✔

HINT:
- list the ones you think might be important, and ones the author missed

Comments:
Authors did not identify any confounding variables.

Possible confounding variables could be selection bias. Although participants were street children in the children's village, there could be different baseline characteristics between participants who were observed/interviewed and those who were not. These were not accounted for.

5. (b) Have they taken account of the confounding factors in the design and/or analysis?

Yes	
Can't Tell	✔
No	

HINT:
- look for restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

Comments:
Participants were collected purposively. Participant characteristics (e.g., age, sex) were not documented by the authors.

The authors used Talcott Parsons functional structural theory perspective to analyse data. Analysis had four stages: data collection, data reduction, data presentation and conclusion verification.

Analysis may have subjectivity and bias as it relies on researcher's interpretation.

6. (a) Was the follow up of subjects complete enough?

Yes	
Can't Tell	
No	✔

HINT: Consider
- the good or bad effects should have had long enough to reveal themselves
- the persons that are lost to follow-up may have different outcomes than those available for assessment
- in an open or dynamic cohort, was there anything special about the outcome of the people leaving, or the exposure of the people entering the cohort

6. (b) Was the follow up of subjects long enough?

Yes	
Can't Tell	
No	✔

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Comments:

This paper was merely exploring the role of KAN. The authors did not follow up on the children post-KAN to see if the program had lasting effects.

Section B: What are the results?

7. What are the results of this study?

HINT: Consider
- what are the bottom line results
- have they reported the rate or the proportion between the exposed/unexposed, the ratio/rate difference
- how strong is the association between exposure and outcome (RR)
- what is the absolute risk reduction (ARR)

Comments:

The findings of this study explored the role of KAN in facilitating the transition of street children towards a regular life.

8. How precise are the results?

HINT:
- look for the range of the confidence intervals, if given

Comments:

This paper was a qualitative case study and did not need statistical analysis.

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9. Do you believe the results?

Yes	✔
Can't Tell	
No	

HINT: Consider
- big effect is hard to ignore
- can it be due to bias, chance or confounding
- are the design and methods of this study sufficiently flawed to make the results unreliable
- Bradford Hills criteria (e.g. time sequence, dose-response gradient, biological plausibility, consistency)

Comments:
Findings of the study explore the role of KAN and the authors wrote a comprehensive paper exploring the six roles and responsibilities of the KAN.

Section C: Will the results help locally?

10. Can the results be applied to the local population?

Yes	✔
Can't Tell	
No	

HINT: Consider whether
- a cohort study was the appropriate method to answer this question
- the subjects covered in this study could be sufficiently different from your population to cause concern
- your local setting is likely to differ much from that of the study
- you can quantify the local benefits and harms

Comments:
Findings will be able to help locally.

11. Do the results of this study fit with other available evidence?

Yes	✔
Can't Tell	
No	

Comments:
Results from the paper contributes to and enhance existing literature on the programs for street children.

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12. What are the implications of this study for practice?

Yes	✔
Can't Tell	
No	

HINT: Consider
- one observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making
- for certain questions, observational studies provide the only evidence
- recommendations from observational studies are always stronger when supported by other evidence

Comments:

Overall, KAN serves as a comprehensive support system for street children that respects and integrates Indonesian culture into its program. This underscored the importance of cultural contexts for supporting street children and has the potential to guide policy-making and implementation.

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CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Paper for appraisal and reference: Solong et al. (2023) Street Child Management Policy at Social Office of Makassar City, Indonesia

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes ✔ | Can't Tell | No

HINT: Consider
- what was the goal of the research
- why it was thought important
- its relevance

Comments:
The paper addressed clear aims for the research and the research question was focused. The purpose of the research was to find out the policies implemented by the government in supporting street children.

This research was crucial to shed light on the social welfare of street children, human rights, public health, education and social integration.

2. Is a qualitative methodology appropriate?

Yes ✔ | Can't Tell | No

HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal

Comments:
Qualitative methodology was appropriate for addressing the research question. This was well-suited for exploring the informants experiences and perspectives. Primary data collection such as field observations and interviews were appropriate. The qualitative methodology provides an understanding of the complexities and nuances of street children and government policies.

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes ✔ | Can't Tell | No

HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:
By combining field observations and interviews with key informants, the research design allows for a comprehensive exploration of the policies implemented by the government to support street children.

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4. Was the recruitment strategy appropriate to the aims of the research?

Yes ✔
Can't Tell
No

HINT: Consider
- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments:
Research informants were recruited using purposive sampling. This was appropriate considering the nature of the research rationale and research question.

Purposive sampling allowed the researchers to select participants who could provide valuable insights into the street children policies, ensuring that the study's objectives could be effectively addressed. It enabled the researchers to target individuals with relevant experience and/or expertise which enhanced the quality and relevance of the data collected.

5. Was the data collected in a way that addressed the research issue?

Yes ✔
Can't Tell
No

HINT: Consider
- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

Comments:
Data collection approach effectively addressed the research issue of investigating the policies implemented by the government to support street children.

Observations allowed the researchers to directly observe behaviours and interaction, while in-depth interviews provided insights informants' perspectives and/or lived experiences. Researchers minimised researcher bias and remained objective in their analysis which was evident through thorough documentation of field notes and fact-checking from secondary data (e.g., photos, laws and regulations of street children field notes).

Supplementing primary data with secondary sources such as publications, books, journals, and magazines enhances the breadth and depth of the research. Secondary data can provide theoretical frameworks, historical perspectives, comparative analyses, and additional empirical evidence relevant to the research issue. It allowed the researchers to contextualise their findings within existing literature and perspectives on government policies for street children.

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6. Has the relationship between researcher and participants been adequately considered?

Yes	☐
Can't Tell	☐
No	☑

HINT: Consider
- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:
The relationship between the researcher and participants was not adequately considered; the researcher did not examine their own role.

Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes	☐
Can't Tell	☐
No	☑

HINT: Consider
- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

Comments:
Ethical issues were not taken into consideration and were not documented in the paper. Approval was not sought out from the ethics committee.

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8. Was the data analysis sufficiently rigorous?

Yes ✔
Can't Tell
No

HINT: Consider
- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Comments:
The researchers used a four-step analysis to analyse the data: Data selection, data reduction data display and drawing conclusions/verifying.

The researchers wrote an in-depth description of their data analysis techniques

9. Is there a clear statement of findings?

Yes ✔
Can't Tell
No

HINT: Consider whether
- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

Comments:
The paper has a clear statement of findings of government policies on street children. Researchers used secondary data which provided additional sources of information and perspectives that can help verify the accuracy and reliability of primary data or claims.

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Section C: Will the results help locally?	
10. How valuable is the research?	HINT: Consider • If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature • If they identify new areas where research is necessary • If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

In addition to finding out the policies implemented by the government to support street children, the researchers also identified what factors are inhibiting and encouraging the government in carrying out policies to support or assist street children.

Understanding the barriers that hinder government efforts to support street children can guide policymakers in addressing gaps and weaknesses in existing policies. Knowledge of the factors influencing government actions can help policymakers allocate resources more effectively to support street children. Prioritising areas where resources are most needed and targeting interventions based on identified barriers and enablers, policymakers can maximise the impact of limited resources and ensure that interventions reach those who need them most.

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