Resilience, social support and psychological wellbeing among adolescents in institutional care in Lusaka, Zambia

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ABSTRACT

Adolescents in institutional care are exposed to parental loss, neglect, abandonment and poverty, which heighten their risk of stress, anxiety, depression and impaired psychological wellbeing. Evidence from Zambia on how resilience and social support relate to wellbeing in institutional settings, and on interventions that can strengthen them, is limited. This study sought to (i) identify the stressors experienced by adolescents in institutional care; (ii) assess their perceived levels of resilience and social support; (iii) determine the relationship between resilience, social support and psychological wellbeing; and (iv) evaluate the effectiveness of Cognitive Behavioural Therapy (CBT) in enhancing psychological wellbeing. This study is anchored in Lazarus and Folkman's Stress and Coping Theory. A quasi-experimental, one-group pre-test–post-test design ($O_1 \rightarrow X \rightarrow O_2$) was used. The target population was orphaned adolescents aged 10–18 years in registered institutional care facilities in Lusaka and surrounding districts. Facilities were selected purposively, and a sample size of 300 was determined using Yamane's formula (N = 1,200; e = 0.05). Data were collected with the Perceived Stress Scale (PSS-10), the Depression Anxiety Stress Scale (DASS-21), the Child and Youth Resilience Measure (CYRM-28), the Multidimensional Scale of Perceived Social Support (MSPSS), the WHO-5 Well-Being Index and Ryff's 18-item Psychological Well-being Scale, before and after a six-week group CBT intervention. Data were analysed using descriptive statistics, Pearson correlations, linear regression and paired-samples t-tests with Cohen's d ($\alpha = .05$). At baseline, 89% of adolescents reported moderate or high perceived stress; emotional/psychological (92%), social/relational (78%) and environmental/institutional (71%) stressors were most prevalent. Resilience (M = 72.4) and social support (M = 47.8) were low to moderate, with family support the weakest domain (78% low). Resilience and social support were positively correlated (r = .58) and negatively correlated with stress, anxiety and depression (r = −.44 to −.53); both correlated positively with World Health Organization [WHO]-5 wellbeing (r = .61 and .59). After CBT, resilience, social support and wellbeing increased and stress, anxiety and depression fell by about 30% (all $p < .001$; d = 0.97–1.19). Resilience and social support are jointly associated with better psychological wellbeing among adolescents in Zambian institutional care, and a structured group CBT programme was followed by large, consistent improvements. Because the design had no control group, these improvements indicate promise rather than proven causal effect. Recommendation, institutions and policymakers should integrate CBT-based psychosocial programmes, caregiver training, routine mental health screening and family-linked support into institutional care, and controlled trials should test these effects further.

Keywords: Adolescents; Cognitive Behavioural Therapy (CBT); Institutional care; Psychological wellbeing; Resilience; Social support; Zambia

I. INTRODUCTION

An orphan is conventionally defined as a child under 18 years who has lost one or both parents (United Nations Children's Fund [UNICEF], 2026). The number of orphans worldwide remains a significant humanitarian, social and psychological challenge. The loss of one or both parents deprives children of emotional security and exposes them to adverse developmental outcomes, including psychological trauma, behavioural problems, academic underperformance and social marginalisation. UNICEF (2026) estimates that 151 million children aged 0–17 years worldwide are orphans, of whom 13.5 million lost one or both parents to AIDS-related causes; about 9.8 million of these children live in sub-Saharan Africa. In Zambia, parental loss has strained the traditional extended-family safety net and increased reliance on institutional care.

Institutional care typically meets children's basic needs for food, shelter and education, but often fails to provide the individualised emotional care and stable attachments required for healthy psychological development (Johnson et al., 2006; Zeanah et al., 2005). High caregiver-to-child ratios limit responsive, one-on-one interaction (Dozier et al., 2012), and evidence from the Bucharest Early Intervention Project, which was designed to study the effects of institutionalisation (Zeanah et al., 2003), shows that children raised in institutions display cognitive delays that are partly reversed by family-based placement (Nelson et al., 2007). Institutional rearing has also been linked to growth failure (Johnson & Gunnar, 2011), attachment disturbance (Zeanah et al., 2005), poor emotional regulation, and heightened anxiety and depression. Nonetheless, some institutions that emphasise quality caregiving, education and community

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engagement have succeeded in fostering resilience (Theron & Theron, 2010), and social support from peers, caregivers and community organisations plays a critical role in buffering psychological distress (Ungar, 2008).

Despite the existence of care institutions that provide shelter and basic needs, adolescents in these settings continue to experience anxiety, depression, behavioural difficulties and attachment problems arising from suboptimal care. While some orphans display remarkable resilience, the factors underlying this resilience are not fully understood in the Zambian context. Prior research has highlighted the importance of multi-layered social support from caregivers, peers, extended family and community (Theron & Theron, 2010; Ungar, 2008), but evidence from Zambia on the availability and quality of that support, and on context-specific, culturally relevant interventions, remains scarce. Previous studies have largely documented the prevalence of psychological distress or the general effects of institutionalisation, without adequately explaining how specific forms of social support and resilience buffer psychological ill-health among these children (Dozier et al., 2012). This gap limits the development of targeted interventions that leverage protective factors effectively.

This study is significant because it addresses the urgent need to identify and strengthen protective factors that enable orphaned adolescents in institutional care to adapt positively to adversity. By examining the interplay between resilience and social support within Zambian institutions, and by testing Cognitive Behavioural Therapy (CBT) as an intervention, the study contributes evidence to inform mental health programming, caregiver training and community-based support networks that extend beyond institutional walls.

1.1 Research Objectives

i. To find out the stressors experienced by adolescents in institutional care.
ii. To assess the perceived levels of resilience and social support among adolescents in institutional care.
iii. To determine the relationship between resilience, social support and psychological wellbeing of adolescents in institutional care.
iv. To evaluate the effectiveness of Cognitive Behavioural Therapy (CBT) as an intervention to enhance the psychological wellbeing of adolescents in institutional care.

Guided by these objectives and the theoretical framework in Section 2.1, the study tested four hypotheses:

H1 (Objective i): Adolescents in institutional care experience elevated perceived stress arising from several overlapping categories of stressors (emotional, social, environmental, educational and economic).

H2 (Objective ii): Adolescents in institutional care report low to moderate levels of resilience and perceived social support, with family support the weakest source.

H3 (Objective iii): Resilience and perceived social support are positively associated with psychological wellbeing and negatively associated with stress, anxiety and depression.

H4 (Objective iv): Participation in a six-week group CBT programme is followed by significant improvements in resilience, perceived social support and wellbeing, and significant reductions in stress, anxiety and depression.

II. LITERATURE REVIEW

2.1 Theoretical Review

This study is anchored in Lazarus and Folkman's (1984) Stress and Coping Theory, which holds that psychological stress arises when individuals appraise environmental demands as exceeding their personal and social resources, and that coping, whether problem-focused or emotion-focused, mediates the relationship between stress and psychological outcomes. Institutionalised adolescents face multiple stressors, including parental loss, abandonment, stigma and restricted family-based support, so their wellbeing depends on the coping resources available to them. Two bodies of work specify those resources. The stress-buffering hypothesis proposes that perceived social support protects wellbeing by reducing the impact of stressors on health, although the evidence also includes direct, main-effect associations of support with wellbeing (Cohen & Wills, 1985). Resilience research, in turn, treats positive adaptation under adversity as the product of individual capacities, relationships and contexts rather than a fixed trait (Luthar et al., 2000; Masten, 2001; Masten & Garmezy, 1985; Rutter, 1987), and Bronfenbrenner's (1979) ecological model locates these resources in nested systems from family and peers to institution and community. Finally, the theory supports CBT, which builds adaptive coping by reshaping maladaptive appraisals and strengthening problem-solving. Taken together, the framework yields the study's logic: stressors (Objective i) are weighed against resilience and social support (Objective ii), which are expected to relate to wellbeing (Objective iii) and to be modifiable through CBT (Objective iv).

2.2 Stressors in Institutional Care

The institutional care literature documents stressors that arise from the care environment itself. Reviews of young children in institutions describe emotional neglect, low caregiver responsiveness and the absence of stable attachment figures (Dozier et al., 2012; Johnson et al., 2006), and Romanian studies found markedly more attachment

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disturbance among institutionalised than community children (Zeanah et al., 2005). The Bucharest Early Intervention Project showed that cognitive delay in institutionalised children was partly reversed when they were moved to quality family-based care (Nelson et al., 2007). These studies, however, concentrate on young children and on European settings, and they emphasise caregiving quality more than the multi-domain stressors that adolescents describe.

African research on orphanhood adds loss, poverty and stigma. AIDS-orphaned children in South Africa and Uganda showed more depression, anxiety and trauma symptoms than non-orphaned peers (Atwine et al., 2005; Cluver et al., 2007), and the elevated distress persisted over time (Cluver et al., 2012). A review of HIV-affected children concluded that cumulative adversities such as poverty, bereavement and educational disruption erode mental health, and that risk and resilience research should be linked to intervention (Betancourt et al., 2013). For adolescents, the transition out of care is a further stressor: youth leaving out-of-home care in the United States fared worse than their peers in education, employment and housing (Courtney & Dworsky, 2006), which suggests that worry about life after institutional care is a plausible stressor in its own right. Most of this work, though, compares orphans with non-orphans or follows foster-care alumni; it does not quantify the domains of stress, such as the emotional, relational, environmental, educational and economic, among adolescents living in institutions in Zambia.

2.3 Resilience and Social Support in Institutional Care

Longitudinal and conceptual work established that resilience depends on protective relationships. The Kauai study identified at least one stable, caring adult as a recurrent protective factor (Werner & Smith, 1992), and Masten (2001) described resilience as arising from ordinary adaptive systems such as caregiving, cognition and community. Luthar et al. (2000) cautioned that resilience is a dynamic process, not a trait, and that it must be defined relative to specific adversities. A concept analysis of adolescent resilience likewise identified individual, family and community protective factors (Olsson et al., 2003), and a review of resilience in children and youth identified supportive relationships among them (Zolkoski & Bullock, 2012). Cross-cultural work shows that resilience resources are shaped by context (Ungar, 2008), and the Child and Youth Resilience Measure was developed to capture individual, relational, community and cultural resources across cultures (Ungar & Liebenberg, 2011).

Evidence from Zambia on resilience in institutional care is limited, and South African work shows that resilience studies from Africa need to attend to local sources of support (Theron & Theron, 2010). What remains unclear is the level of resilience and the sources of perceived support (family, peers and significant others) among adolescents in Zambian institutions, particularly how weak family support compares with peer and staff support.

2.4 Resilience, Social Support and Psychological Wellbeing

Theoretically, social support and resilience are expected to operate together. Support can buffer stressors or contribute directly to wellbeing (Cohen & Wills, 1985), and protective-factor models propose that support promotes resilience, which in turn promotes adjustment (Masten & Garmezy, 1985; Luthar et al., 2000). Reviews of children affected by HIV/AIDS report that caregiver and social support are associated with better mental health and resilience, but that few studies isolate the pathways (Betancourt et al., 2013). Evidence on these links is dominated by non-institutional samples, by single-outcome analyses and by cross-sectional designs that cannot separate the contributions of resilience and support. Few studies relate both constructs jointly to distress (stress, anxiety, depression) and to positive wellbeing among adolescents in institutions.

2.5 Effectiveness of CBT

Zambia has one of the strongest evidence bases for CBT among vulnerable children in Africa. A pilot evaluation of trauma-focused CBT (TF-CBT) delivered by lay counsellors to orphaned and vulnerable children in Lusaka found it feasible and associated with reduced symptoms (Murray et al., 2013), and a subsequent randomised trial with 257 trauma-affected children found larger improvements with TF-CBT than with usual care (Murray et al., 2015). Moderator analyses within the Zambian trials showed that benefit varied with the child's characteristics, which points to the value of tailoring protocols (Kane et al., 2016), and an apprenticeship model for training local providers has been proposed to build delivery capacity in low-resource countries (Murray et al., 2011). A systematic review of TF-CBT with children and youth also supported its efficacy for trauma symptoms while noting limits in the evidence base (Cary & McMillen, 2012).

These trials share two features that limit their direct bearing on the present study. They targeted trauma symptoms, usually post-traumatic stress, and recruited children from communities rather than specifically from residential institutions. Their outcomes rarely include resilience, perceived social support or positive wellbeing. Whether a brief group CBT programme can shift these protective and promotive outcomes in adolescents in institutional care is therefore an open question.

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2.6 Synthesis and Research Gaps

Across the four bodies of work, four gaps justify the present study. *Theoretically*, appraisal-and-coping theory, the stress-buffering hypothesis and resilience models are seldom brought together in a single analysis of institutionalised adolescents. *Empirically*, stressors in institutions have been documented mainly for young children or foster-care alumni; the multi-domain stressors of adolescents in Zambian institutions, and the sources of support they perceive, have not been quantified. *Methodologically*, evidence on resilience, support and wellbeing is largely cross-sectional and correlational, and CBT trials in Zambia have measured trauma symptoms rather than resilience, support and wellbeing. *Contextually*, little is known about these processes in Zambian institutions, where family support is disrupted but peers, caregivers and staff may partly substitute for it. The study addresses these gaps by measuring stressors, resilience, social support and wellbeing in one sample of adolescents in institutional care in Lusaka and surrounding districts, relating them to one another, and testing the change associated with a group CBT intervention.

III. METHODOLOGY

3.1 Research Design

The study used a quasi-experimental, one-group pre-test–post-test design ($O_1 \rightarrow X \rightarrow O_2$), where O_1 was the pre-test measurement of resilience, social support, stress, anxiety and wellbeing, X was the CBT intervention and O_2 was the post-test measurement of the same variables. The design was appropriate because the research questions concern both the status of adolescents before intervention (Objectives i–iii, answered with the baseline cross-section) and change after intervention (Objective iv). A one-group design was chosen because randomisation or the withholding of a promising intervention from a comparison group is often impractical and ethically contentious in institutional settings. Its principal limitation, the absence of a control group, is discussed in Sections 3.9 and 4.2.4.

3.2 Study Area

The study was conducted in registered institutional care facilities (orphanages and children's homes) in Lusaka and surrounding districts, Zambia. Lusaka was chosen because it hosts a large concentration of registered facilities and is the setting of the earlier Zambian work on resilience and CBT among orphans reviewed in Section 2.

3.3 Target Population

The target population was orphaned adolescents aged 10–18 years living in registered institutional care facilities in the study area. This age range was selected because adolescents in this bracket can generally complete standardised self-report instruments reliably. Based on official and non-governmental organisation reports, the population was estimated at N = 1,200 children.

3.4 Sampling Technique, Sample Size and Eligibility

Institutions were selected purposively on the basis of accessibility, willingness to participate and similarity in care structure. The sample size was determined with Yamane's (1967) formula for finite populations, $n = N / (1 + Ne^2)$, where N = 1,200 and the margin of error $e = 0.05$, which gives $n = 1{,}200 / (1 + 1{,}200 \times 0.0025) = 1{,}200 / 4 = 300$. A sample of 300 adolescents was therefore recruited for the baseline assessment. Of these, 60 adolescents completed both the group CBT programme and the post-test and form the paired sample analysed for Objective (iv) (Tables 6 and 7). The baseline sample size is adequate for the correlation and regression analyses planned for Objectives (i)–(iii), and it is feasible given the available time and resources. Adolescents were eligible if they were aged 10–18 years, had lived in a registered institution for at least six months (to limit transitional stress), could communicate in English, Bemba or Nyanja, gave assent, and had consent from their caregivers or institutional administrators. Adolescents with severe intellectual disability or acute psychiatric conditions that would impede completion of the questionnaires, and those who declined participation or whose guardians refused consent were excluded.

3.5 Data Collection Instruments

Six standardised, previously validated self-report instruments were used (Table 1). Each was selected because it measures one of the study's key variables and has been used with adolescents.

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Table 1

Instruments, constructs measured and scoring

Instrument	Construct	Items and response format	Scoring / interpretation
PSS-10	Perceived stress (Obj. i, iii, iv)	10 items; 5-point (0–4)	Total 0–40; higher = more stress
DASS-21	Stress, anxiety, depression (Obj. i, iii, iv)	21 items (7 per subscale); 4-point (0–3)	Subscale sum × 2; severity bands
CYRM-28	Resilience (Obj. ii, iii, iv)	28 items	Total score; higher = greater resilience
MSPSS	Perceived social support (Obj. ii, iii, iv)	12 items; 7-point; family, friends, significant others	Total 12–84 and subscale scores
WHO-5	Subjective wellbeing (Obj. iii, iv)	5 items; 6-point (0–5)	Raw 0–25 × 4 = 0–100
Ryff-18	Psychological wellbeing (Obj. iii)	18 items; 6-point; six dimensions	Total and dimension scores

Stress. The PSS-10 (Cohen et al., 1983) measures the degree to which situations in the past month are appraised as stressful, which matches the appraisal focus of the theoretical framework; scores range from 0 to 40. The stress subscale of the DASS-21 (Lovibond & Lovibond, 1995), scored by multiplying subscale sums by two, provided a symptom-based severity classification, and its anxiety and depression subscales measured those outcomes. Published internal consistency for the DASS-21 subscales is acceptable to excellent (Antony et al., 1998; Henry & Crawford, 2005). Stressor categories (Table 2) were derived from the endorsement of stressful experiences by participants. *Resilience and social support.* The CYRM-28 measures individual, relational, community and cultural resources associated with resilience and was developed across diverse cultural contexts (Ungar & Liebenberg, 2011); higher scores indicate greater resilience. The MSPSS (Zimet et al., 1988) has 12 items on a 7-point scale that form three subscales, family, friends (peers) and significant others (here, caregivers, mentors and staff), with published reliabilities typically between .85 and .91.

Wellbeing. The WHO-5 Well-Being Index (Topp et al., 2015) has five positively worded items scored 0–25 and multiplied by four to give a 0–100 percentage score; it also functions as a screen for depression. Ryff's (1989) Psychological Well-being Scale, in its 18-item version (Ryff & Keyes, 1995), captures six dimensions (self-acceptance, autonomy, environmental mastery, purpose in life, personal growth and positive relations with others) and was used to complement the WHO-5.

3.6 The CBT Intervention

Following the baseline assessment, participants took part in a structured, group-based CBT programme delivered over six weeks by trained counsellors or psychologists with child-protection and trauma-informed-care training. Attendance was monitored and notes were kept on participant engagement. The intervention targeted maladaptive appraisals, emotional regulation and problem-solving, consistent with the coping model in Section 2.1.

3.7 Data Collection Procedure

Formal permission was obtained from the ethics review bodies and from the management of each institution. Introductory meetings with administrators, caregivers and staff explained the purpose and procedures; caregivers acted as gatekeepers to facilitate access. Information sheets and consent forms were given to caregivers or guardians, and assent was explained in age-appropriate language to the adolescents. Pre-test assessments were completed in small groups in a quiet, safe room within the institution; trained research assistants helped participants who had difficulty reading, without influencing responses. Sessions lasted about 45–60 minutes with breaks to minimise fatigue. The CBT programme followed, and after it the same battery of scales was re-administered under the same conditions. Forms were checked for completeness, and missing responses were handled systematically.

3.8 Data Analysis

Data were analysed in SPSS/Stata and R. Scale scores were computed following each instrument's scoring rules, with reverse-keyed items recoded beforehand. For Objectives (i) and (ii), frequencies, percentages, means and standard deviations were computed for the severity bands and stressor categories, and linear regression was used to test whether specific stressors (for example, dormitory overcrowding) predicted perceived stress. For Objective (iii), Pearson correlations were computed among resilience, social support, stress, anxiety, depression and the wellbeing measures. For Objective (iv), paired-samples *t*-tests compared pre-test and post-test means, with Cohen's (1988) *d* for dependent samples (mean difference divided by the standard deviation of the differences) and percentage change. All tests were two-tailed with $\alpha = .05$, and effect sizes were reported alongside *p*-values. Effect sizes were interpreted as large when $d \geq 0.8$ (Cohen, 1988).

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3.9 Validity and Reliability

Validity and reliability were addressed in four ways. First, only instruments with published validity evidence for adolescents or cross-cultural samples were used, and the content of each instrument maps onto one of the study variables. Second, the instruments were administered in English, Bemba or Nyanja, the languages in which they are validated or translated. Third, standardised administration (same setting, instructions and assistance at pre-test and post-test) limited instrumentation effects. Fourth, internal consistency was assessed with Cronbach's α, with $\alpha \geq .70$ treated as acceptable. The one-group design is exposed to history, maturation, testing and regression-to-the-mean threats; these were reduced by the short six-week interval and are acknowledged in the interpretation of results.

3.10 Ethical Considerations

Because the participants were vulnerable children, ethical clearance was obtained from the University of Zambia Research Ethics Committee (School of Humanities and Social Sciences), the National Health Research Authority and the Ministry of Community Development and Social Services, and each orphanage's management approved the study. Caregivers or guardians gave informed consent and adolescents gave assent, with clear assurance of voluntary participation and the right to withdraw without penalty. Confidentiality was protected by assigning unique codes instead of names, by not sharing individual responses with caregivers, and by storing data in password-protected files and locked cabinets accessible only to the research team. Results are reported in aggregate form so that no child or institution can be identified. CBT sessions followed child-safeguarding procedures: facilitators monitored participants for distress, discussions were treated as confidential under group norms, and any adolescent identified as being in significant distress was referred to the institution's counsellor or an external mental health service. Small non-coercive tokens of appreciation were given at the end of the study.

IV. FINDINGS & DISCUSSIONS

4.1 Findings

4.1.1 Stressors Experienced by Adolescents in Institutional Care (Objective i; H1)

Pre-test PSS-10 scores showed that 68% of adolescents experienced moderate stress, 21% high stress and only 11% low stress; DASS-21 stress subscale results were similar, with 57% in the moderate range, 23% severe and 8% extremely severe. Thus 89% of adolescents were in the moderate or high PSS-10 bands. Five overlapping categories of stressors emerged (Table 2), which supports H1.

Table 2

Prevalence of stressor categories at pre-test (N = 300)

Stressor category	Prevalence (%)	Most cited concerns
Emotional/Psychological	92	Grief over parental loss (74%), fear of the future (63%), unresolved trauma (58%)
Social/Relational	78	Lack of family contact (68%), few close friendships (55%), peer conflict (49%)
Environmental/Institutional	71	Overcrowding (62%), lack of privacy (58%), strict rules (53%)
Educational/Future-related	64	Anxiety about life after the institution (67%), fear of poor performance (57%)
Economic/Material	52	Limited clothing, pocket money and hygiene supplies

Note. Categories overlap; percentages do not sum to 100.

Stressors were interdependent: emotional distress correlated strongly with social isolation ($r = .63$, $p < .001$), and dormitory overcrowding significantly predicted higher PSS-10 stress scores ($\beta = .41$, $p < .01$).

4.1.2 Levels of Resilience and Social Support (Objective ii; H2)

Baseline resilience (CYRM-28) and perceived social support (MSPSS) were generally low to moderate, with 87% and 88% of adolescents in the low or moderate bands respectively, which supports H2 (Table 3). Emotional regulation was the most compromised resilience domain (43% low), while cognitive/problem-solving and relational resilience were moderate for roughly half of participants. On the MSPSS, family support was the weakest domain (78% low), whereas support from peers and from significant others (caregivers, mentors, staff) was higher but inconsistent. Resilience and social support were positively correlated ($r = .58$, $p < .001$).

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Table 3

Baseline resilience and perceived social support (N = 300)

Variable	M (SD)	Low (%)	Moderate (%)	High (%)
Resilience (CYRM-28; range 28–112)	72.4 (11.5)	38	49	13
Social support (MSPSS; range 12–84)	47.8 (10.3)	42	46	12
Family support subscale	—	78	20	2
Peer support subscale	—	33	40	27
Significant-others support subscale	—	34	38	28

4.1.3 Relationship between Resilience, Social Support and Psychological Wellbeing (Objective iii; H3)

Pre-test correlations were all statistically significant (Table 4), which supports H3. Resilience and social support were each negatively correlated with stress, anxiety and depression, with correlations of moderate to strong size (r = −.44 to −.53). Both were also positively correlated with wellbeing (Table 5): resilience with WHO-5 (r = .61) and Ryff's scale (r = .57), and social support with WHO-5 (r = .59) and Ryff's scale (r = .55).

Table 4

Pre-test correlations among resilience, social support, stress, anxiety and depression

Variable	1	2	3	4	5
1. Resilience	—				
2. Social support	.58	—			
3. Stress (PSS-10)	−.53	−.51	—		
4. Anxiety (DASS-21)	−.49	−.47	.61	—	
5. Depression (DASS-21)	−.46	−.44	.59	.57	—

Note. All correlations $p < .001$.

Table 5

Pre-test correlations of resilience and social support with wellbeing

Wellbeing measure	Resilience	Social support
WHO-5 Well-Being Index	.61	.59
Ryff's Psychological Well-being Scale (18-item)	.57	.55

Note. All correlations $p < .001$.

4.1.4 Effectiveness of CBT (Objective iv; H4)

After the CBT intervention all outcome variables changed in the expected direction (Table 6). Resilience rose by 17%, social support by 16.6% and WHO-5 wellbeing by 30.8%, while stress, anxiety and depression each fell by approximately 30%.

Table 6

Pre-test and post-test scores (paired analyses, n = 60)

Variable	Pre-test M (SD)	Post-test M (SD)	Mean difference	% change
Resilience (CYRM-28)	72.4 (11.5)	84.7 (9.3)	+12.3	+17.0
Social support (MSPSS)	68.2 (10.1)	79.5 (8.7)	+11.3	+16.6
Stress (PSS-10)	24.7 (5.2)	17.3 (4.6)	−7.4	−30.0
Anxiety (DASS-21)	18.2 (4.9)	12.6 (4.1)	−5.6	−30.8
Depression (DASS-21)	16.9 (5.1)	11.8 (4.3)	−5.1	−30.2
Wellbeing (WHO-5)	52.3 (10.5)	68.4 (9.1)	+16.1	+30.8

Paired-samples t-tests (Table 7) showed that all pre–post differences were statistically significant, with large effect sizes, which supports H4. Post-test correlations between resilience and social support strengthened (r = .62, $p <$ .001), as did their associations with wellbeing (r = .66 and .61, respectively), while associations with stress, anxiety and depression remained significant and negative (r = −.46 to −.58).

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Table 7

Paired-samples t-tests of pre-test versus post-test scores (df = 59)

Variable	t	p	Cohen's d	Effect size
Resilience	8.74	< .001	1.13	Large
Social support	7.96	< .001	1.02	Large
Stress	−9.21	< .001	1.19	Large
Anxiety	−8.02	< .001	1.03	Large
Depression	−7.54	< .001	0.97	Large
Wellbeing	9.12	< .001	1.17	Large

Note. d is reported as an absolute value; negative *t* indicates a reduction.

4.2 Discussion

4.2.1 Stressors in Institutional Care

The finding that nearly nine in ten adolescents reported moderate or high stress agrees with studies showing elevated distress among orphaned children (Atwine et al., 2005; Cluver et al., 2007), and the dominance of grief over parental loss and fear of the future within the emotional category fits the bereavement and adversity pathways described by Betancourt et al. (2013). The results extend the institutional literature in two ways. First, the institutional literature has stressed caregiver ratios and attachment disruption in young children (Dozier et al., 2012; Johnson et al., 2006; Zeanah et al., 2005); our adolescents also named overcrowding, lack of privacy and strict rules, and overcrowding significantly predicted stress (β = .41). The care environment itself therefore adds to stress beyond the loss that brought the child into care. Second, the educational and future-related stressors, chiefly anxiety about life after the institution (67%), resemble the poor early outcomes of care leavers reported by Courtney and Dworsky (2006), which suggests that adolescents anticipate that risk while still in care. Because those outcome data come from another country and from foster-care alumni, this parallel is suggestive rather than confirmatory. Read through Lazarus and Folkman's (1984) theory, the high stress levels reflect appraisal of institutional demands as exceeding available resources, which is the mismatch that the next two findings clarify.

4.2.2 Resilience and Social Support

The low-to-moderate resilience and support scores are consistent with the view that resilience is built on protective relationships, which are unevenly available (Masten, 2001; Werner & Smith, 1992). The weakness of the family-support domain (78% low) is expected in a sample defined by parental loss or separation, but it qualifies the idea that an institution can substitute for the family: peer and significant-other support were higher but also inconsistent, and the institution appears to supply some support without fully replacing it. This is in line with the cross-cultural argument that resilience resources are context-specific (Ungar, 2008; Ungar & Liebenberg, 2011), because in these settings the resources that matter most are likely to be peers and staff rather than family. The finding that emotional regulation was the most compromised resilience domain extends earlier reviews that identified supportive relationships as protective (Zolkoski & Bullock, 2012) by pointing to a specific individual capacity that an intervention could target. We note that a cross-sectional baseline cannot show whether these low levels reflect institutional life or the adversities that preceded it.

4.2.3 Relationship between Resilience, Social Support and Wellbeing

The positive correlation between resilience and social support (r = .58), and the negative correlations of both with stress, anxiety and depression, agree with the stress-buffering and protective-factor models (Cohen & Wills, 1985; Masten & Garmezy, 1985) and with ecological accounts that place adaptive capacity within proximal relationships (Bronfenbrenner, 1979). The positive associations with WHO-5 and Ryff wellbeing show that both resources relate to positive functioning as well as to lower distress, consistent with the claim that protective factors promote as well as protect (Luthar et al., 2000). These data extend the earlier evidence, which came mainly from non-institutional samples and addressed single outcomes (Betancourt et al., 2013), by showing the same pattern jointly for stress, anxiety, depression and two wellbeing measures in institutionalised Zambian adolescents. However, the correlations are concurrent and self-reported; they do not show that support builds resilience or that resilience mediates the effect of support, and Luthar et al. (2000) caution against reading resilience as a fixed trait. Shared method variance may also contribute to the size of the correlations. The results are therefore consistent with the buffering account without testing its mechanism.

4.2.4 Effectiveness of CBT

The improvement in all outcomes after CBT agrees with Zambian trials of TF-CBT with vulnerable children (Kane et al., 2016; Murray et al., 2013, 2015) and with the systematic evidence that CBT reduces symptoms in children and youth (Cary & McMillen, 2012). It extends that work in three ways: the outcomes were resilience, perceived social

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support and positive wellbeing rather than trauma symptoms alone; the participants were adolescents resident in institutions; and the programme was brief and delivered in groups. The rise in perceived support alongside resilience suggests that group sessions may have worked partly as a relational intervention that strengthened peer and staff ties, which fits the theoretical expectation that coping resources are both internal and social (Lazarus & Folkman, 1984; Cohen & Wills, 1985). That perceived support rose even though family ties were weak suggests that interventions can enlarge the supportive resources adolescents perceive.

Two cautions qualify these results. First, because there was no control group, the improvements cannot be attributed to CBT alone; maturation, history (for example, concurrent institutional activities), repeated testing and regression to the mean may each have contributed, and the randomised trials cited above (Murray et al., 2015) therefore remain the stronger basis for causal claims. Second, the paired analyses were based on a smaller group than the baseline sample, so that attrition or selection into the intervention may have influenced the results. The large effect sizes (d = 0.97–1.19) and the consistency of change across six measures are encouraging but should be treated as estimates of change that need replication in controlled designs.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Adolescents in institutional care in Lusaka experience a complex, interdependent set of emotional, social, environmental, educational and economic stressors, with emotional/psychological and social/relational stressors the most prevalent; H1 was supported. Resilience and perceived social support were low to moderate, particularly in the family-support domain, which left many adolescents vulnerable to stress, anxiety and depression; H2 was supported. Resilience, social support and psychological wellbeing were strongly and consistently interrelated, which indicates that internal adaptive capacities and external relational resources are jointly associated with adolescent mental health in institutional settings; H3 was supported. The CBT intervention was followed by statistically significant and practically meaningful improvements in resilience, social support and wellbeing and by substantial reductions in stress, anxiety and depression, with large effect sizes; H4 was supported. Within the limits of a one-group design, these findings suggest that a structured, group-based psychosocial intervention can strengthen both individual coping capacities and relational support among orphaned adolescents, and that it is a promising strategy for improving psychosocial outcomes in Zambian institutional care.

5.2 Recommendations

The recommendations follow from the findings and conclusion. Because baseline stress was high and CBT was followed by large improvements in resilience, support and wellbeing, institutions should adopt structured, age-appropriate, evidence-based interventions such as group CBT as a routine part of care rather than as an occasional project, and should reinforce them through group activities, mentorship and social-skills sessions that build peer and caregiver relationships, since perceived support increased alongside resilience. To sustain these gains, caregivers and institutional staff need training in psychosocial support, trauma-informed care and basic CBT principles, and each institution should screen routinely for stress, anxiety, depression, resilience and perceived support so that at-risk adolescents are identified early and progress is monitored. Because family support was the weakest domain, institutions and the Ministry of Community Development and Social Services should invest in family tracing, reunification support and community-based mentorship that extend adolescents' support networks beyond the institution, and should prepare older adolescents for the transition out of care, which was a prominent source of anxiety.

At policy level, government and development partners should allocate sustained funding for psychosocial programmes in registered institutions, require psychosocial support services alongside basic care in the standards that govern them, and coordinate health, education and social-welfare services so that emotional, social and educational needs are addressed together. For research, because this study used a one-group design in selected institutions in and around Lusaka, controlled or randomised trials with longer follow-up should test the durability and causal effect of CBT, compare it with other psychosocial interventions, and include institutions from other provinces and qualitative evidence on adolescents' experiences, so that the findings can be generalised and refined.

Declaration of Interest

The authors declare that they do not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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