ORIGINAL ARTICLE

Emotional and behavioral problems and coping strategies among adolescent orphans

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ABSTRACT

Background and objective: Rising incidence of mental health problems is a serious issue all over the world. Adolescents living in orphanages are at a particular risk as they have numerous challenges in their life and coping with them requires adequate life skills. This study aims to assess the emotional and behavioral issues and the coping strategies adopted by adolescent orphans in Pakistan.

Methods: This cross-sectional study comprises 109 adolescent orphans living in different orphanages. The Strengths and Difficulties Questionnaire for evaluating the emotional and behavioral problems (EBPs) was used while KIDCOPE scale was adopted to assess the coping strategies.

Results: About 34.9% of orphans fell in an abnormal range of EBP and 22.9% were in the borderline zone. The most prevalent problem was conduct (25.7%) followed by peer problems (24.8%), emotional instability (18.3%), hyperactivity (17.4%), and prosocial behavior (11%). A significant and positive correlation was observed between peer problems and maladaptive strategies (r = 0.191, p = 0.047) and between prosocial behavior and adaptive strategies (r = 0.294, p = 0.002).

Conclusion: Orphans residing in orphanages suffer from behavioral and emotional problems and are using maladaptive coping strategies. It is highly suggestive to monitor and maintain an optimal psychological health of this vulnerable population in our country.

Keywords: Orphan, orphanage, adolescent, strengths and difficulties questionnaire (SDQ), emotional and behavioural problems (EBP), KIDCOPE scale, coping.

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Introduction

Adolescence is an important developmental period of life that affects health and well-being throughout the life span. The way they are cared for has a deep impact on their mental well-being.[1] Parental death has a profound influence on a child's psychological development. Orphans are at particular risk of developing mental problems because of their parent's death as well as improper family support and substandard living conditions.[2] Half of all mental illnesses, especially emotional and behavioral problems (EBPs), beginning in the early teens and by the mid-20 seconds. Every fifth child or adolescent suffers from a mental issue that needs proper care and support.[3] The traumatic life experiences after their parent's death put a more negative impact on their psychological health.[4]

The orphans not only have a lack of health care providers but also have to confront stigmatization, isolation, and inequity.[5] The high prevalence of child mental health problems is troublesome because, among these, the EBPs are considered as powerful leading factors for causing psychiatric as well as physical ailments and even earlier mortality in future life.[6]

The most frequently seen behavioral problem is aggression, destructive behavior, fighting, lying, and isolation in orphans of adolescent age groups. The institutionalized children are more prone to develop anger which may turn into aggression and hostility because of a lack of proper medical and nursing care as well as psychological and emotional support by the service providers.[7,8,9] The Strengths and Difficulties Questionnaire (SDQ) is one of the most widely

used instruments. It can be used among children aged 4-17 years. It covers a broad range of behavioral and emotional problems including conduct problems, hyperactivity, emotional, peer problems, and prosocial behaviors. All five scales consist of five sub-questions. Each has scoring ranging from 0 to 10. There are in total of 25 questions.[10] Utilizing standard deviation (SD), it is reported that both internalizing and externalizing problems were higher among institutionalized children.[11]

Emotional disorders are characterized by various problems such as anxiety, depression, fear, anger, stress, frustration, low self-esteem, and somatic symptoms.[12] Orphans have to deal with multiple challenges and a sense of permanent loss and grief makes them emotionally disturbed with increased aggression and emotional fragility. Most of them often feel unhappy, fearful, and anxious.[13] These emotional problems are frequently seen in the early years of life and considerably increase with the duration of stay in the orphanage.[14]

Orphans often face difficulty in coping with their environment and in dealing with their life's variabilities.[15] Most of them use negative coping mechanisms such as becoming isolated, crying a lot, skipping meals, and even substance abuse to avoid their frustrating surrounding which can be harmful to their well-being. Particularly, adolescent orphans are found to be using negative coping strategies like self-criticism, denial, and wishful thinking. Both positive and negative strategies are used by the orphans as they tend to use these strategies according to their perception and cognition.[16-18]

KIDCOPE is a self-report checklist used to identify different coping strategies used by children. It consists of 15 questions revealing the following 10 common coping strategies: distraction, social withdrawal, cognitive restructuring, blaming others, self-criticism, problem-solving, emotional regulation, wishful thinking, social support, and resignation. Positive coping strategies are calculated by adding 5, 8, 9, 11, and 14 questions, and negative strategies are measured by using 1-3, 4, 6, 7, 10, 12, 13, and 15 questions.[19] As adolescence is a crucial period of life, any damage during this time can leave long-term and irreparable effects on the whole life of an individual. Early age is a good time to diagnose all these problems so that they can be timely intervened.[20] There is a crucial need to investigate these problems and their extent. This study thus assesses the EBPs and coping strategies among institutionalized adolescents in Pakistan.

Methods

This cross-sectional study was conducted at the University of Health Sciences Lahore, Pakistan, with the collaboration of different orphanages in Pakistan from July 2020 to February 2021. After approval from the Institutional Ethical Review Committee, 109 orphans of the adolescent age group were selected through convenient sampling after meeting the eligibility criteria. Orphans who were having frequent contact with their families through regular weekend visits, those with any history of significant neurological or mental deficits, those who were taking any antipsychotic or mood stabilizers drugs, etc., at the time of the study, or with a recent head injury or any other significant physical trauma and challenged children were excluded. The SDQ questionnaire, comprising 25 questions, was used for the assessment of behavioral and emotional issues[11], while the KIDCOPE checklist[19] was used to identify different coping strategies used by these adolescents.

Statistical analysis

The data were entered and analyzed using SPSS 25.0. Mean and SD was given for quantitative variables while frequency

Table 1. *Comparison of the mean scores of SDQ between genders of orphans (n = 109).*

Domain	Gender	*n*	Mean ± SD	*p*-value*
Emotional	Male	78	3.99 ± 2.08	0.038*
	Female	31	5.00 ± 2.70	
Conduct	Male	78	4.41 ± 1.96	0.003*
	Female	31	3.23 ± 1.54	
Hyperactivity	Male	78	4.29 ± 2.31	0.775
	Female	31	4.16 ± 1.88	
Peer	Male	78	4.14 ± 1.97	0.567
	Female	31	4.39 ± 2.12	
Prosocial	Male	78	7.36 ± 2.28	0.067
	Female	31	8.23 ± 1.98	
SDQ	Male	78	16.83 ± 6.03	0.963
	Female	31	16.77 ± 5.88	

*Independent sample *t*-test.

and percentage were given for qualitative variables. Pearson correlation was used to find the relationship between SDQ and KIDCOPE score in relation to sociodemographic variables.

Results

Out of 109 orphans, 78 (71.6%) were males and 31 (28.4%) were females. The mean age of the orphans was 13.3 ± 1.6 years. The mean duration of the stay at the orphanages was 4.55 ± 2.52 years with a range of 1 to 11 years. The findings reveal that 34.9% (38) of children were rated as having psychological problems whereas 22.9% (25) were on borderline and 42.2% (46) were found as normal for emotional and behavioral characteristics. On individual scales, 20 (18.3%) adolescents had emotional problems, 28 (25.7%) had conduct problems, 19 (17.4%) were hyperactive, 27 (24.8%) had abnormal peer problems, and 12 (11.0%) children had abnormal prosocial behavioral issues. An independent sample *t*-test was used to compare the mean scores of the SDQ between genders (Table 1).

Children used a variety of coping strategies, the most common of them was to try to sort out the problem (mean = 1.56, SD = 0.54), try to feel better by spending time with others like friends (mean = 1.52, SD = 0.61), try to calm him/herself down (mean = 1.50, SD = 0.54), and try to forget it (mean = 1.50, SD = 0.62) (Table 2).

The mean KIDCOPE score was higher for the study participants belonging to the age group ≥14 years and whose duration of stay in orphanages was >5 years. Mean KIDCOPE score according to gender in positive and negative strategies is given in Table-3 which showed a significant mean score among both genders.

Pearson correlation test was applied to determine the correlation between children's mental health rated by SDQ and coping strategies (Table 4). A negative correlation was

Table 2. *Frequency of KIDCOPE category scores used by adolescent orphans (n = 109).*

KIDCOPE scale	Do you?		How much did it help?			
	Yes (%)	No (%)	Not at all	A little	A lot	Mean ± SD
1. Try to forget it	92 (84.4)	17 (15.6)	6 (5.5)	34 (31.2)	52 (47.7)	1.50 ± 0.62
2. Do something like watch TV or play a game to forget it	66 (60.6)	43 (39.4)	3 (2.8)	30 (27.5)	33 (30.3)	1.45 ± 0.587
3. Stay on your own	74 (67.9)	35 (32.1)	7 (6.4)	33 (30.3)	34 (31.2)	1.36 ± 0.653
4. Keep quiet about the problem	69 (63.3)	40 (36.7)	4 (3.7)	33 (30.3)	32 (29.4)	1.41 ± 0.602
5. Try to see the good side of things	86 (78.9)	23 (21.1)	3 (2.8)	44 (40.4)	39 (35.8)	1.42 ± 0.563
6. Blame yourself for causing the problem	74 (67.9)	35 (32.1)	10 (9.2)	36 (33.0)	28 (25.7)	1.24 ± 0.679
7. Blame someone else for causing the problem	43 (39.4)	66 (60.6)	5 (4.6)	25 (22.9)	13 (11.9)	1.19 ± 0.627
8. Try to sort out the problem	93 (85.3)	16 (14.7)	2 (1.8)	37 (33.9)	54 (49.5)	1.56 ± 0.541
9. Try to sort out the problem by doing something or talking to someone about it	86 (78.9)	23 (21.1)	5 (4.6)	46 (42.2)	35 (32.1)	1.35 ± 0.589
10. Shout, scream, or get angry	65 (59.6)	44 (40.4)	9 (8.3)	34 (31.2)	22 (20.2)	1.20 ± 0.666
11. Try to calm yourself down	86 (78.9)	23 (21.1)	5 (4.6)	33 (30.3)	4 (44.0)	1.50 ± 0.609
12. Wish the problem had never happened	91 (83.5)	18 (16.5)	12 (11.0)	32 (29.4)	47 (43.1)	1.38 ± 0.711
13. Wish you could make things different	88 (80.7)	21 (19.3)	7 (6.4)	35 (32.1)	46 (42.2)	1.44 ± 0.641
14. Try to feel better by spending time with others like family, grown-ups, or friends	85 (78.0)	24 (22.0)	5 (4.6)	31 (28.4)	49 (45.0)	1.52 ± 0.610
15. Do nothing because the problem couldn't be solved	61 (56.0)	48 (44.0)	9 (8.3)	33 (30.3)	19 (17.4)	1.16 ± 0.663

Table 3. *Mean KIDCOPE score according to gender in positive and negative strategies (n = 109).*

Domain	Gender	*n*	Mean ± SD	*p*-value*
KIDCOPE	Male	78	10.06 ± 2.08	<0.001*
	Female	31	12.06 ± 1.79	
Positive or adaptive strategies	Male	78	3.77 ± 1.29	0.001*
	Female	31	4.58 ± 0.76	
Negative or maladaptive strategies	Male	78	6.29 ± 1.50	0.001*
	Female	31	7.48 ± 1.75	

*Student *t*-test.

observed between the total SDQ score and the positive adaptive coping strategies score (r = -0.098, p = 0.309) whereas a positive correlation was observed between the total SDQ score and negative or maladaptive coping strategies score (r = 0.179, p = 0.062). The correlation of the scores between prosocial domain and the total coping strategies and positive or adaptive strategies was positive and significant (r = 0.257, p = 0.007; r = 0.294, p = 0.002), respectively. The correlation between the scores for peer-related issues and negative coping strategies was negative and significant (r = 0.191, p = 0.047).

Discussion

In this study, 109 orphans of adolescent age were selected from five different orphanages in Pakistan. The age range of the participants was between 11 and 17 years, in which 71.6% were males and 28.4% were females. In Pakistan, a recent study concluded the prevalence of behavioral and emotional problems in 15.9% of the general population.[21] But in the case of orphans, the local literature is scarce. This study reports that 34.9% of adolescent orphans had emotional and behavioral issues, whereas 22.9% of the children fall in a borderline range according to the SDQ score. Mishra and Tung [22] from India are also in favor that the EBPs are on the higher side in the institutionalized population.

Based on subscales of strength and difficulty questionnaire, the most prevalent problem in this study was conduct disorder (25.7%) followed by peer-related issues, emotional hyperactivity, and prosocial behavior. These findings are in agreement with the study from Peshawar city where conduct disorder was reported as the most common problem among orphans.[23] The high prevalence of conduct disorder could be associated with many factors as the child has to continually deal with the loss of parents, proper care and guidance, and social discrimination.[24] In this study, the overall SDQ score with regard to gender was insignificant; however, considering individual domain, the mean score of the males was significantly (p < 0.05) associated with the conduct disorder while females were found to have a significant relationship with a higher ratio of emotional disorders. Similar to these findings, studies from Kenya and India also found that the girls reported more internalizing problems than the boys.[25,26] The findings by Mutiso et al. [27] however show that boys have higher prevalence rates of EBPs. In this study, SDQ scores are found to be insignificantly related to the age and duration of stay in the orphanages, but the mean scores for all the EBPs except conduct were higher in children above 14 years of age. Consistent with this, Kaur et al. [5] co-researchers from India reported an increased tendency of EBPs in older children (20.77%) as compared to the younger ones (10.09%). Mutiso et al. [27] from Kenya however reported contrary findings where older children (14-18 years) were 2-3 times less likely to deal with these problems as compared to the younger ones. Life in an orphanage puts a significant impact on orphans' coping potential. Various studies had mentioned the difference in coping behaviors of varying ages and different genders. Concerning these issues, this study reveals a significant difference between coping strategies and gender. Females have significant ratings in both types of adaptive as well as maladaptive coping. The results of a study conducted on orphans residing in the orphanages of Malaysia showed that there is a significant difference between coping potential and gender. Males indulged in using varied adaptive coping strategies like substance abuse, distraction, religion, and humor as compared to females. Both genders, however, were involved in negative coping mechanisms.[28] These results are in disagreement with the qualitative study

Table 4. *Correlation between the SDQ and KIDCOPE scores in adolescent orphans (n = 109).*

		KIDCOPE	Positive or adaptive strategies	Negative or maladaptive strategies
SDQ	Correlation coefficient (r)	0.081	-0.098	0.179
	p-value	0.404	0.309	0.062
Emotional	Correlation coefficient (r)	0.132	0.059	0.131
	p-value	0.171	0.539	0.174
Conduct	Correlation coefficient (r)	-0.088	-0.186	0.020
	p-value	0.362	0.053	0.835
Hyperactivity	Correlation coefficient (r)	0.109	-0.017	0.157
	p-value	0.260	0.858	0.103
Peer	Correlation coefficient (r)	0.054	-0.163	0.191
	p-value	0.580	0.091	0.047*
Prosocial	Correlation coefficient (r)	0.257	0.294	0.124
	p-value	0.007*	0.002*	0.200

*Significant value

performed on orphans in Zimbabwe. The study did not confirm any association between gender and choice of coping mechanisms.[18] Adolescence is a transitional period of life for physical and psychological development. Being an orphan itself is a harsh experience that puts a child in vulnerable conditions. A significant number of adolescents are found to be suffering from mental health problems worldwide. Adoption of adequate and effective coping strategies is the only way forward for maintaining the appropriate physical and mental health of these deprived children. Regular surveys should be carried out to further explore and monitor the psychosocial needs of the orphans and proper systems and policies should be in place to address their physical as well as psychological issues. For the promotion of mental health and the prevention of mental disorders, the government and stakeholders should put efforts to train and recruit psychiatric nurses in both public and private hospitals who should regularly visit these orphanages and help these children through effective counseling, support, and referral services.

Conclusion

A positive relationship exists between an increase in EBPs and the adoption of maladaptive strategies by adolescent orphans residing in orphanages. Appropriate measures must be taken to achieve an optimal mental health status for these children for their positive development and future role as effective citizens of the country.

Limitations of the study

The study could not take into account an in-depth analysis of the psychological and mental status of these children by psychiatric evaluation. The eligibility of the participants was determined based on their own responses to our questions regarding inclusion in the study, hence a potential bias exists.

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List of Abbreviations

EBPs	Emotional and behavioral problems
SDQ	Strengths and difficulties questionnaire

Conflict of interest

None to declare.

Grant support and financial disclosure

None to disclose.

Ethical approval

The study has been approved by the Institutional Ethical Review Committee of the University of Health Sciences Lahore vide Letter No. UHS/REG/20/ERC-1441 dated 22-06-2020.

Author's contribution

MQ, ZA: Acquisition of data, drafting of the manuscript, intellectual input to the manuscript

MG: Conception and design of the study, intellectual input to the manuscript

SK, NUS: Critical revision with intellectual input

FK, NS: Analysis and interpretation of data

ALL AUTHORS: Approval of the final version of the manuscript to be published.

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References

1. Schulz KM, Sisk CL. The organizing actions of adolescent gonadal steroid hormones on brain and behavioral development. Neurosci Biobehav Rev. 2016;70:148–58. https://doi.10.1016/j.neubiorev.2016.07.036
2. Woldeamanuel SG. The emotional difference between children living with biological parents and children living with caregivers in institutional homes in Accra: University of Ghana. 2016 [cited 2022 May 2]. Available from: http://197.255.68.203/handle/123456789/21645
3. Atwine B, Cantor-Graae E, Bajunirwe F. Psychological distress among AIDS orphans in rural Uganda. Soc Sci Med. 2005;61(3):555–64. https://doi.10.1016/j.socscimed.2004.12.018
4. Dorsey S, Lucid L, Murray L, Bolton P, Itemba D, Manongi R, et al. A qualitative study of mental health problems among orphaned children and adolescents in Tanzania. J Nerv Ment Dis. 2015;203(11):864–70. https://doi.10.1097/NMD.0000000000000388
5. Kaur R, Vinnakota A, Panigrahi S, Manasa RV. A descriptive study on behavioral and emotional problems in orphans and other vulnerable children staying in institutional homes. Indian J Psychol Med. 2018;40(2):161–8. https://doi.10.4103/IJPSYM.IJPSYM_316_17
6. Maselko J, Sikander S, Bangash O, Bhalotra S, Franz L, Ganga N, et al. Child mental health and maternal depression history in Pakistan. Soc Psychiatry Psychiatr Epidemiol. 2016;51(1):49–62. https://doi.10.1007/s00127-015-1143-x
7. Suzuki H, Tomoda A. Roles of attachment and self-esteem: impact of early life stress on depressive symptoms among Japanese institutionalized children. BMC Psychiatry. 2015;15:8. https://doi.10.1186/s12888-015-0385-1
8. Majeed R, Khan MA, Khan MNS. A comparative study of personality differences between orphans and nonorphans of Lahore. J Pak Psychiatr Soc. 2014;11(2). Available from: http://www.jpps.com.pk
9. Chong AYS, Khodabakhsh S. Cognitive behavioral therapy on anger regulation with single-parent child residing in

an orphanage: a case study. MOJC. 2017 [cited 2022 May 2];3(1):57–61. Available from: http://mojem.um.edu.my/index.php/MOJC/article/view/5551
10. Rezaie E, Alizadeh KH. The comparison of risky behavior, communication skills and self-efficacy between adolescents of orphanage, replacement families and normal families in Bandar Abbas. 2017. https://doi.10.21859/jne-06058
11. Padmaja G, Sushma B, Agarwal S. Psychosocial problems and wellbeing in institutionalized and non-institutionalized children. J Humanit Soc Sci. 2014;19:59–64. https://doi.10.9790/0837-191025964
12. Organization WH. MhGAP intervention guide for mental, neurological and substance use disorders in non-specialized health settings: mental health gap action programme (mhGAP)-version 2.0: World Health Organization. 2016 [cited 2022 May 2]. Available from: https://apps.who.int/iris/handle/10665/250239
13. Datta P, Ganguly S, Roy B. The prevalence of behavioral disorders among children under parental care and out of parental care: a comparative study in India. Int J Pediatr Adolesc Med. 2018 [cited 2022 May 2];5(4):145–51. https://doi.10.1016/j.ijpam.2018.12.001
14. Sujatha R, Jacob SM. Study on emotional and behavioural problems among adolescent children in selected orphanages at Mangalore. Zenith Int J Multidiscip Res. 2014;4(7):253–9.
15. Thabet AM. Coping and mental health of children with special needs in the Gaza strip. JOJNNHC. 2017 [cited May 2];4(3):555637. Available from: https://juniperpublishers.com/jojnhc/pdf/JOJNHC.MS.ID.555637.pdf
16. Yendork JS, Somhlaba NZ. Problems, coping, and efficacy: an exploration of subjective distress in orphans placed in Ghanaian orphanages. J Loss Trauma. 2015;20(6):509–25. https://doi.10.1080/15325024.2014.949160.
17. Thabet AAM, Elheloub M, Vostanis P. Prevalence of PTSD, depression, and anxiety among orphaned children in the Gaza strip. EC Paediatrics. 2017 [cited 2022 May 2];5(6):159–69. Available from: https://bettercarenetwork.org/sites/default/files/ECPE-05-00152.pdf
18. Gotora RS. Gender and age differences in coping behaviors of young adults who were orphaned during childhood: Capella University. 2016 [cited 2022 May 2]. Available from: https://www.proquest.com/openview/1289ec7f36064c57494b4862631ade70/1?pq-origsite=gscholar&cbl=18750
19. Baloyi T, Takalani F. Coping resources of psychological stress utilized by orphans in Magona village of Malamulele community in Limpopo Province, South Africa. 2016 [cited 2022 May 2]. Available from: https://ssrn.com/abstract=3028637
20. Chegeni G, Chegeni M. Evaluating the effect of two storytelling techniques (pure storytelling and storytelling combined with discussion) in reducing aggression in boys living in orphanage. J Adv Pharm Res. 2018 [cited 2022 May 2];8(2):115. Available from: https://japer.in/article
21. Goodman R. The strengths and difficulties questionnaire: a research note. J Child Psychol Psychiatry. 1997;38:581–6. https://doi.org/10.1111/j.1469-7610.1997.tb01545.x
22. Mishra S, Tung NS. Emotional regulation and emotional and behavioral problems (EBP) among institutionalised adolescents. Indian J Hum Relat. 2018;52(2):83–90.
23. Khurshaid F, Mahsood N, Kibriya Z. Prevalence and determinants of behavioral problems among adolescents living in orphanage facilities of district Peshawar, Khyber Pakhtunkhwa, Pakistan. Khyber Med Univ J. 2018;10(2):95–100. https://doi.10.35845/kmuj.2018.17587
24. Malik TA, Siddiqui S, Mahmood A. Behavioural and emotional problems among school children in Pakistan: a telephonic survey for prevalence and risk factors. J Paediatr Child Health. 2019;55(12):1414–23. https://doi.10.1111/jpc.14429
25. Katyal S, Chandel V. A comparative study of wellbeing of orphan and non-orphan children. Int J Soc Sci Stud. 2019 [cited 2022 May 2];9(7):203–9. Available from: https://www.indianjournals.com/ijor.aspx?target=ijor:ijrss&volume=9&issue=7&article=015
26. Magai DN, Malik JA, Koot HM. Emotional and behavioral problems in children and adolescents in central Kenya. Child Psychiatry Hum Dev. 2018;49(4):659–71. https://doi.10.1007/s10578-018-0783-y
27. Mutiso VN, Musyimi CW, Tele A, Ndetei DM. Epidemiological patterns and correlates of mental disorders among orphans and vulnerable children under institutional care. Soc Psychiatry Psychiatr Epidemiol. 2017;52(1):65–75. https://doi.10.1007/s00127-016-1291-7
28. Mohammadzadeh M, Awang H, Ismail S, Kadir Shahar H. Stress and coping mechanisms among adolescents living in orphanages: an experience from Klang Valley, Malaysia. Asia Pac Psychiatry. 2018;10(1):e12311. https://doi.10.1111/appy.12311.