Review Article

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Factors associated with depression among young people globally: a narrative review

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ABSTRACT

Although depression is a major concern for global health, understanding of this phenomenon has been limited since most of the empirical studies address personal characteristics without much consideration to larger environmental contexts for adolescents globally. The objective was to review factors associated with depression among young people. The researchers adopted a narrative review of selected peer reviewed articles on depression with a focus on the factors associated with depression among young people. The papers were selected according to the six World Health Organization (WHO) regions. The results show that females were at greater risk of depression compared to their male counterparts. Also, genetic predisposition as a result of maternal rumination was a factor for depression among young people in all WHO regions. Past history of depressive symptoms, uncontrollable negative life events, and family-related stressful events contributed significantly to depression among young people. Finally, the study recommends that mental health services at primary healthcare level be prioritized in all Low and Middle-Income countries (LMICs) to help identify and handle early cases of mental health in young people.

Keywords: Depression, Mental health, Young people, Risk Factors

INTRODUCTION

In 2017, the world Health Day had the theme "Depression Let's talk" bringing attention to its "silent epidemic" globally. Depression is a common mental disorder and globally, more than 350 million people of all ages suffer from depression, an increase of 18% from 2005-2015. Depression is the leading cause of disability worldwide and is a major contributor to the overall global burden of disease¹.

According to the WHO, in any given year, 20% of adolescents experience mental disorders notably depression and anxiety. Depressive disorders account for highest proportion of (8.2%) of the burden in 10-24 years old, with bipolar disorders accounting for (3.8%) in this age group.² At its worst, depression can lead to suicide.

Untreated or unrecognized depression lead to over 800,000 suicide deaths every year among young people aged 15-29 years old globally.³ Close to 80% of young people with depression and 75% of this age group who commit suicide live in LMICs.³ Although effective treatments exist for depression, only a few people get access, with less than 10% of affected people in countries receiving such treatment.¹

Depression in young people may be expressed differently from that in adults. It manifests as behavioral disorders (e.g. irritability, verbal aggression and misconduct), substance abuse and/or concurrent psychiatric problems and usually starts by age 10-24 years.⁴ It is characterised by somatic (generalized bodily) complaints, school difficulties, fatigue, boredom/apathy, disturbed eating, lack of motivation, decreased concentration and anxiety.⁴

The world is home to 1.8 billion young people aged 10 to 24 years old⁵. This number is projected to still peak by 2030 to about 2 billion, with about 50% of this age group currently living in LMICs.⁵ Considering the demographic dividend of the young population, the objective of the study is to review the factors associated with depression among young people globally. Also, though investments have been made by benevolent organizations, barriers such as lack of resources and trained health-care providers, and social stigma associated with mental disorders and inaccurate assessment still exist. This study will inform proper resource allocation towards mental health in LMICs.

METHODOLOGY

Study setting

The review was done across all WHO six regions. This study selected peer reviewed articles published in all continents the WHO regions which include Africa, America, Europe, East Mediterranean, South East Asia, and the Western Pacific. The researcher divided the study into High-Income Countries and Low and Middle-Income Countries according to World Bank classification for easy analysis.

Study population

The study considered young people aged 10-24 years old in high-income countries and Lower and middle-income countries. The review was carried out from December 2018 to December 2019.

Study selection

Inclusion criteria

For the purpose of this review, age groups of 10-24 years old have been considered with no exclusion based on gender or ethnicity or race. Peer reviewed papers published from 2010 to 2017 in printed or electronic format were considered. In order to include a study of comparable quality, the researchers included studies of all kind from Randomized control trials, quasi-experimental, that reported associated factors with depression. Studies that did not fall within the year 2010-2017 group and studies carried out based on Religious characteristics were excluded. Also, articles that did not report any factors were excluded.

Search strategy

Study selection and data collection

All the titles and abstracts extracted were scanned thoroughly for relevance. Duplicate articles and those that did not meet inclusion criteria were removed. Full-text papers were also selected. The selection was based primarily on factors associated with depression (Table 1)

Key sources of searching for information

The main source on the researchers was online search of literature from academic publishing sites, as well as the review of manual academic write-ups (Table 2).

Table 1: Summary of search strategy used for electronic database search.

Terms related to depression	Origin	Population	Services	Setting	
Mental health	Low-income country	Youth	School health	Schools	
Depression	Middle income country	Adolescents	Policies	Homes	
Psychosocial	Upper middle income country	Young people	Programs	Community	
Psychosocial risk factors	High-income country	Family	Prevention	Hospitals	
	Americas		Health promotion	Primary health care	
	southeast Asia				
	Africa	Parents			
	East Mediterranean				
	Europe, Pacific regions				

Table 2: Specific sources of data.

Medline/pubmed	Medline (ovid)
Psycinfo	Excerpta medica (ovid)
Ssci	Social science citation index
Google scholar	
Cochrane	Cochrane database of systematic
library	review, database of abstract
	reviews of effects (dare),

Statistical analysis

A narrative synthesis of the retrieved studies was used to answer questions of this review. This was done because of the time for the work and the fact that studies for prevalence, and factors associated with depression among young people globally were so varying and would not allow for quantitative analysis of the findings from the study.

RESULTS

Search results

An initial online and manual search on the database produced 700 articles for further review. However, a total of 308 articles were eliminated from the review upon scrutinizing titles and abstracts. The researchers excluded all duplicate or studies that did not actually fall under the year (2010-2017), as well as studies carried in ages above 10-24 years old. 392 articles were further analysed and those that did not fall within the objectives were further excluded. This meant that 200 articles had to be removed from the study.

Consequently, 192 articles were reviewed and 88 further excluded from the study as some did not give clear descriptions of the objectives that the researcher sought to achieve. Finally, full-text 104 peer reviewed articles were further analysed results and 34 articles on risk factors were used for the study. Some of the articles contain information on both risk factors and prevalence which has been included. All articles were published in English.

Risk factors associated with depression in young people

A total of 34 articles reviewed from both hics and lmics on factors associated with depression among young people have been summarized in Tables 3-7. A total of 15 articles cited gender as the common risk factor for the onset of depression among young people. Also, 13 articles reported childhood adversities, interpersonal relationship with adolescents or peers. While past history with depressive symptoms, uncontrollable negative life events and family-related stressful events were reported by 5 articles as factors associated with depression among young people.

From the review summarized in the Tables 3-7, there was a manifold of risk factors and a lack of common data. However, young females reported greater risk for depression compared to their male counterparts. Genetic predisposition as a result of maternal rumination was reported as a factor for depression among young people globally. All the factors have been categorized into five main subgroups:

Demographic factors including age, genetics, gender, parents' education, socioeconomic status, location, and a number of households. Communicational problems including parents' divorce, the relationship between adolescent-parents, inter-parental relationship, parenting styles, violence, and punishment. Educational factors including poor academic performance, school change, extracurricular activities, type of school, degree, and field of education. Psychological factors including a history of mental illnesses in the family, stressful events (such as death and divorce), and personality. Other factors including overweight and obesity, internet addiction, smoking, and drug abuse.

Table 3: Risk factors for onset of depression among young people globally aged 10-24 years old.

Author/Country	Target group	Study design	Sample	Risk factors
Thorsteinsson, Australia	12-18ys	Cross- sectional	41 (m=21, f=20)	The effects of social internet use in combination with different psychosocial factors seem to have more positive effects than negative ones on change in depression and the development of compulsive internet use
Thorsteinsson et al 2013 Australia	ages of 14 and 18	Cross- sectional	510 343 boys 167 girls	Social support satisfaction and number were both significantly associated with depression High maladaptive coping, acting out and rumination was associated with high depression
Tang et al 2014 China	10-25	Meta-analysis	11 studies totaling 12,890	For children, the significant predictors were prior trauma; being trapped during the disaster; experiencing injury, fear, or bereavement during the disaster, witnessing injury/death during the disaster; having poor social support
Mojs, et al 2011 Poland	18 years	Cross- sectional	210	Only the financial status of the family
Lee et al 2013 South Korea	6 th -grade students	Cross- sectional	262	The predictors of boys' depression were 1. Anxiety, 2. Perceived school life, and neighborhood. Predictors of girls' depression were 1. Anxiety, 2.self-concept, 3. caregiving style, and neighborhood

Continued.

Author/Country	Target group	Study design	Sample	Risk factors
Leslie et al 2015 USA	12-18yrs and mothers	Cross- sectional	113 families	Mothers experiencing high levels of trauma symptoms • authoritarian style
Cole et al 2012 USA	11-18	Cross- sectional	1697 4-18 yrs.	weight loss and decreased appetite
Ericsson et al 2014 USA	offspring dyad	Cross- sectional	375 biological parent	 Parental depressive symptoms and neuroticism
Jafari et al 2014 IRAN	13-18 high school adolescents and mothers	Cross- sectional	270	Rumination (β = .297, p< .001) Mothers with higher levels of rumination are expected to have adolescents with a higher score in depression.

Table 4: Risk factors for onset of depression among young people globally aged 10-24 years old.

Author/ Country	Target group	Study Design	Sample	Risk factors
Mezulis et al 2014 USA	11-18	Cross- sectional	382	 (51%; displayed low depressive symptoms at all assessments), Increasing(37%; reported low depressive symptoms at age 11, but then significantly higher depressive symptoms than the Stable Low class at ages 13, 15, and 18) Early high (12%; reported high early depressive symptoms at age 11, followed by symptoms that declined over time yet remained significantly higher than those of the Stable Low class at ages 13, 15, and 18). By age 15, rates of Major Depressive Disorder diagnoses among the Early High (25.0%) and Increasing (20.4%) classes were more than twice that observed among the Stable Low class 8.8%.
Karaoglu 2010 Jamaica	18-25	Cross- sectional		Students who were pressured to become doctors and who expected to gain much money were both more anxious and more depressed $(P < 0.05)$. 29.3% had depressive symptoms
Vardanyan 2013 Armenia	14-17	Cross- sectional	713 students	 Female gender parents Being divorced or separate having a widowed parent A negative change in parents' financial situation having trouble with classmates being dissatisfied with housing conditions
Parpio et al 2012, Pakistan	10-16	Cross- sectional	800 school going children	 A number of siblings, Parental conflicts, the age of the mother The number of rooms in the household.
Perumal Murthy et al 2015, India	10-19	Cross- sectional	300 Students	 Autocratic Parenting style, not going to school. Late adolescents (43.5%) than in early adolescents (21%).
Mzikazi Nduna et al 2013 South Africa	15-25	Cross- sectional	1415 M 1368 F	 Increased childhood adversity (aOR 1.34 95% CI 1.116, 1.55); drug use (aOR 1.98 CI 1.17, 3.35); experience of intimate partner violence and sexual violence before the age of 18 years Lower perceptions of community cohesion mother's death (aOR 2.24 CI 1.25, 4.00) and childhood adversity alcohol abuse (aOR 1.63 CI 1.13, 2.35), sexual coercion by a woman (aOR 2.36 CI 1.47, 3.80) relationship conflict (aOR 1.07 CI 1.01, 1.12)

Table 5: Risk factors for onset of depression among young people globally aged 10-24 years old.

Author/Country	Target Group	Study Design	Sample	Risk factors
Lee et al 2013, Philippines	15-24	Cross-sectional	2436 m=1073 f=1373	 Frequency of drinking, level of satisfaction with a financial condition, Levels of closeness with parents & with peers Living/not living with both biological parents
Kim et al 2015, Malawi	12-18	Cross-sectional	562	 Older age, OR 1.23 (95% CI 1.07-1.42); Fewer years of schooling, Bullied for taking medications, (OR 4.20 (95% CI 2.29-7.69)
Peltzer et al 2014, Nigeria	22yrs	Cross-sectional	F=375, m=445	 Lack of social support, Lack of non-organised religious activity, Lack of intrinsic religiosity, The use of skin lightening products, Having screened positive for PTSD, Moderate to a severe sleeping problem Poor academic performance
Michal Yackobovitch-Gavan 2013, Israel	12-18	cohort	79 obese & normal-weight people	Obesity,Lower parental income,Lower self-esteem
Hafsa Raheel 2015, Saudi Arabia	15-19	Cross-sectional	1028	 Female adolescents Household income <12,000 Saudi Riyal/month Relationship with peers and family members (OR 4.63, CI 2.56-8.41), Lived with a single parent or alone (OR 1.77, CI 0.97-3.23), Been emotionally abused Subjected to physical violence, at least once (OR 3.34, CI 1.89-5.91).
Bulhões et al 2013, Portugal	13-year- old females	Cross-sectional	2,787 F=1037,M=951	Family history of depressionSmoking habits
B. Dooley, A. Fitzgerald and N. M. Giollabhui 2015 Ireland		Cross-sectional	6085	 Optimism, personal competence, life-satisfaction, self-esteem, anger, Body dissatisfaction, family competence, maternal and paternal criticism, Experiencing the breakup of a romantic relationship, School and peer connectedness as well as the availability of one good adult parental mental health Experience of racism and bereavement

Table 6: Risk factors for onset of depression among young people globally aged 10-24 years old.

Author/Country	Target Group	Study Design	Sample	Risk factors
Quynh Anh Tran 2015, Vietnam	18-24	Cross-sectional	2099 medical students 1,3, 6 yr.	ACE categories of physical abuse, emotional abuse, alcohol/drug abuser in the family, domestic violence, Bullying
Asare, Ghana	13-18	Cross-sectional	296 adolescents (f=150,f=1 46)	Sedentary life was significant with higher depression,
Le et al 2015, Vietnam	12-17	Cross-sectional	1424 middle and high school	Students who were victimizedbullying
Kolltveit et al 2012, Palestine	12-17	Cross-sectional	139 adolescents	• Female gender (β = <.238, p < .001) was the only significant risk factor for depression
Ahmed M. Abdel Khalek, Ghada K.Eid, Kuwait and Palestine	14yrs	Cross-sectional	K=1937 P=1009	"Religiosity and well-being vs. depression." It was concluded that clinicians treating depression will probably make use of its negative association with religiosity mainly among Muslim clients.
Miletic et al 2014, Serbia	18-25	Cross-sectional	1,296	Symptoms of depression were associated with grade point average, age, relationship status, gender
Shin et al 2013, South Korea	13-15	Longitudinal study	1,659	Childhood attention problems predicted depressive symptoms during adolescence for both boys and girls. For boys, the family structure also predicted adolescent depressive symptoms.
Liangwei Xia, Shuqiao Yao 2015 CHINA	10-25	Systematic review	47 articles	 The serotonergic system (n = 26), dopaminergic system (n = 3), and the Brainderived neurotrophic factor (BDNF) gene (n = 12). 92.3% of studies (24/26) identified positive associations of 5-HTTLPR polymorphism with depressive illness or depressive symptoms. 83.3% of studies (10/12) found a positive association between BDNF Val66 Met genotype and adolescent depressive symptoms.
Mata et al 2010, USA ⁽⁴⁷⁾	10-16	Cross-sectional	82 girls	The BDNF polymorphism being physically active was protective for girls with a BDNF met allele (fewer depressive symptoms) but not for girls with the Val/Val polymorphism.
Priess-Groben HA, Hyde JS 2013, USA	11-15	Longitudinal study	309	A significant four-way interaction of 5-HTTLPR, MAOA-uVNTR, NLE at age 13, and gender predicted depressive symptoms at age 15. Girls were most likely to exhibit elevated depressive symptoms when experiencing NLE if they possessed low-expression MAOA-uVNTR alleles and short 5-HTTLPR alleles, whereas low-expression MAOA-uVNTR alleles but long 5-HTTLPR alleles were implicated in boys

Table 7: Risk factors for onset of depression among young people globally aged 10-24 years old.

Author/Country	Target Group	Study Design	Sample	Risk factors
Wirback et al 2014, Sweden	11-12	Longitudin al study	118 adolesce nts	 Increased risk of depressive symptoms was found in Adolescents whose parents had low education (OR 1.8, CI = 1.1-3.1), were unskilled workers (OR 2.1, CI = 1.2-3.7), intermediate non-manual workers (OR 1.8, CI = 1.0-3.0), or self-employed (OR 2.2, CI = 1.2-3.7), compared to parents with high education and high non-manual work. adolescents living exclusively with one adult Gender and social factors, with an increased risk for girls of low-educated parents living exclusively with one parent
Egypt Hanan Hassan El-Ezaby et al 2015, EGYPT	Mean age 16	Longitudin al study	236 (M=125, F=111)	 Significant association between teens an academic year, Mother's education and depression. Breakdown of family relationships and troubles at school
Cherng Ong et al 2015, Cambodia	11-19	Cross- sectional	303	 Both boys and girls who reported having been too sick-making them unable to attend a school or go to work in the past six months (boys: B = 3.5; 95 % CI = 0.7, 6.2; girls: B = 5.7; 95 % CI = 2.9, 8.5) Who had witnessed violence in the family (Boys: B = 5.6; 95 % CI = 1.6, 9.6; girls: B = 5.8; 95 % CI = 1.7, 9.9) had a higher level of depressive symptoms. Girls who were older (B = 8.5; 95 % CI = 3.0, 14.0), who did not have enough food in the past six months (B = -8.7; 95 % CI = -13.7, -3.7) and whose parents were separated, divorced or dead (B = 3.9; 95 % CI = 0.5, 7.2) had a higher level of depressive symptoms

DISCUSSION

Factors associated with the onset of depression among young people globally.

Demographic factors including age, genetics, gender, parents' education, socioeconomic status, location, and a number of households.

The review show gender, genetic, household, housing and age factors. 6-12 Also, maternal health, the mental health of parents and the physical health of parents have been cited by. 13-16 These are cited as reasons contributing to the onset of depression in young people. The genetic makeup of an individual seems to have a strong link for the onset of depression and from the review; most of these studies have been done in the hics and none in the lmics. Also there have been studies citing gender as a contributing factor for onset of depression. Female gender in particular according to although the reasons for this post-pubertal onset are not fully understood, adolescent depression seems more closely tied to female hormonal changes than to age. 17 Other studies argue that

hormonal changes alone cannot contribute to depression, but hormones have contributed by sensitizing the brain during stress. 18 This means that females are not just prone due to certain hormonal factors, but sensitization on the brain during adverse stress makes them vulnerable to onset of depression. From the review, it is certain that the location of an individual has a bearing on the mental health status of an adolescent as evident from those from lmics more prone than those from hics. Other studies, for instance, systematic review of 55 studies from 23 countries examining the impact of socio-economic inequalities among children and adolescents found that the socioeconomically disadvantaged were 2-3 times more likely to develop mental health problems.¹⁹ Of significance is that longitudinal studies not only confirmed this association but also found that an improvement in socioeconomic status resulted in a significant reduction in and remission of mental health problems. 19,20 Children from socio-economically disadvantaged families were three times more likely to develop mental health problems, unsecured debt has been found to be strongly associated with depression. ^{21,22} This confirms the results from review of articles citing more

adolescents from lmics with depression compared to hics adolescents. Socioeconomics factors have been a significant factor in lmics for onset of depression among young people especially with 50% of young people aged 10-18 living in the world's poorest countries according to the UNFPA.

Communicational problems including parents' divorce, the relationship between adolescent-parents, interparental relationship, parenting styles, violence, and punishment.

A number of the reviews show that adolescents from violent homes, divorce their relationship with parents, relationship between adolescents and parenting style have a big role to play in the onset of depression. Studies show that chaotic and violent homes, have enormous effects on the health of youths. 8-10,12,23-27 Similarly, 50% of depression among young people is attributed to adverse life events from home and community.²⁸ Research has also shown that long term exposure to parental conflict can bring about the onset of depression, parent child relationships, this results in adolescents developing anxiety and depression as studies has shown. 24,29,30 factors including Educational poor academic performance, school change, extracurricular activities, school bullying, and field of education.

A number of the reviews have shown that academic stress including bullying is contributing factor for the onset of depression among young people in both lmics and hics. 31-33 Most studies have attributed academic stress especially among medical students for the onset of depression among young people. This is evident in many lmics where young people in medical school are usually under pressure to perform in order to become breadwinners of their families compared to hics medical students who have no pressure from families, as some reviews show how medical students are depressed with studies and this can be troubling.34 Also, a who study of 40 developing countries showed that the rate of youth exposure to bullying ranged from 8.6%-45.2% among boys and 4.8%-35.8% among girls. Studies have cited bullying from the review as an associating factor for onset of depression in young people.11 In England, a longitudinal survey carried by the department for children on the young people of England found almost half 47% of young people reported being bullied at age 14, however this decreased with age to about 41%. The decrease is believed to be 41% for age 15 and 29% for age 16. Those who had parents report bullied, however, did not experience bullying. This proves that more adolescents develop depression from bullying various kinds. All these factors can prevent young people from performing as expected by parents. In most countries the stress and pressure that comes with learning put so much strain on students as the results hence usually resulting in suicide, evident from literature review in the case of South Korea.

Psychological factors including a history of mental illnesses in the family, stressful events (such as death and divorce), and personality.

The reviews show a history of mental health in the family can be a factor for the onset of mental conditions. Studies have shown that parental mental health can be a factor in the onset of depression.³⁵ Also, stressful life events like a disaster, bereavement, in the life of an individual adolescents HIV/AIDS status, especially harassment contribute to poor mental health among young people. 26,36,37 Studies show that about 77% of posttraumatic exposure and 31% exposure time cause depression in youth. 14,38,39 Societal pressures such as stigma and social exclusion have an effect on the onset of depression too.⁴⁰ This has been shown by some studies conducted to prove the need for societal support to young people. Adverse life events, such as physical assault, death of a close relative, unemployment, or termination of, a romantic relationship, have been found to be associated with more severe depression and this can also contribute to poor academic performance.⁴¹ A systematic review of 181 studies of young adults exposed to conflict and displacement found that more than 30% suffered from both depression and PTSD, and these are usually evident in wars, disasters and emergencies mostly seen in many lmics.⁴² Research consistently suggests that "stressful life events both major and minor often precede the onset of depression, and that an accumulation of stressors can have a graded relationship with the severity of the resulting depressive disorder".

Other factors including overweight and obesity, internet addiction, smoking, and drug abuse.

Few studies from the review has shown some of the above factors associated for the onset of depression among young people.^{24,26,43-45} Studies indicate adolescence sex inequalities from early adolescence in Europe, Canada, and the USA, where girls consistently have poorer wellbeing indicators, such as self-rated health, psychosomatic complaints or symptoms, and life satisfaction, whereas boys have consistently higher levels of injury and being overweight.⁴⁶ In the UK, a study of people who had experienced homelessness and other domains of deep social exclusion (e.g. Institutional care, substance misuse, gangs etc.); found majority of respondents had experienced a range of troubled childhoods influenced by school and/or family problems. Many also reported traumatic experiences, such as sexual or physical abuse and neglect. These experiences were most commonly reported by respondents under 25 years of age.²⁰ As part of internet addictions, most articles cited most hics with some of these factors among young people, though most young people in lmics now have access to internet services.

Study limitation

This narrative review has a number of important limitations, which impact on its validity. Firstly, there are limitations relating to the scope of the systematic search, which impact on the validity of the findings. A search in languages other than English was not undertaken and, therefore, key studies in other languages, for instance, French, Spanish, Portuguese and Arabic, mandarin was not included. Secondly, there are limitations relating to the selection criteria, which also impact on the validity of the findings. Studies were reviewed from a few selected countries from each region which may not be representative in the search process.

Also, as a narrative synthesis, the review is not designed to generate summary statistics from meta-analyses. Despite these limitations, the studies included in this review clearly provide evidence on how a plethora of factors are associated with the onset of depression among young people and its prevalence among young people globally. It further demonstrates how high quality and effective mental health promotion interventions, and their evaluation through well-designed research studies, are feasible in lmic setting though there is lack of human resource.

CONCLUSION

The most important factors contributing to depression were: the female sex, biological (pre, inter and post-conception), poor inter-parental relationship, poor adolescent-parent relationship, socioeconomic status of parents, nature of parenting styles, stressful life events, academic pressure, and bullying. Socio-economic status of parents was the major reasons for the onset of depression in young people in LMICs. However in Africa Region, stressful life events such as HIV/AIDS and conflicts were responsible for the onset of depression. Biological factors were prominent in most studies and further research is needed to investigate the association between different psychosocial risk factors and its explanation for different status of major depressive disorder among youth.

Education of adolescent females in their reproductive age on the risk factors for the onset of depression, this will enhance the change of their lifestyle to reduce the risk associated with preconception. Reproductive health education should include mental health to help expectant mothers take measures to prevent stress during pregnancy to reduce the risk of depression later in the life of young people. Parents and caregivers should be educated on how to keep conflicts in homes away from children, manage divorce well to avoid children from being hurt, and dedicate more time to their children to enhance good coping mechanism. Enhancing public health program focused on violence against children.

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