

Corrigendum

Corrigendum to “The global burden of suicidal behavior among people experiencing food insecurity: A systematic review and meta-analysis”.

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The authors regret to request a corrigendum to their manuscript. They did not transform the odds ratios reported by a multi-county study - Arat (2017). In addition, Steare et al. (2024) identified more issues regarding the data presented in the paper by Arat (2017). To accurately reflect the effects, the study by Arat (2017) was dropped from the analysis. The error affected the following sections of the manuscript.

Abstract

1) The strength of the relationships: “There was a positive relationship between experiencing food insecurity and (i) suicide ideation (aOR=1.078 [95% CI: 1.075-1.082; I2=99.5%, p<0.001, k=30]), (ii) suicide plans (aOR=1.496 [95% CI: 1.257-1.473; I2=91.8%, p<0.001, k=4]), suicide attempts (aOR=1.589 [95% CI: 1.453-1.737; I2=84.6%, p<0.001, k=14]), and (iii) unspecified suicide behaviors (aOR=1.133 [95% CI: 1.052-1.219; I2=53.0%, p=0.047, k=6]).”

2) Due to these changes, the following statements were removed. “However, a negative relationship was observed between experiencing food insecurity and suicide attempts (aOR=0.622 [95% CI: 0.617-0.627; $I^2 = 98.8\%$, $p<0.001$, $k=15$]),” “For suicide attempts, all non HICs had a negative relationship with food insecurity,” and “The paradoxical finding of suicide attempts having a negative relationship with food insecurity warrants further research.”

Results

1) Due to the changes, the total excluded papers are 36, and Fig. 1 changed.

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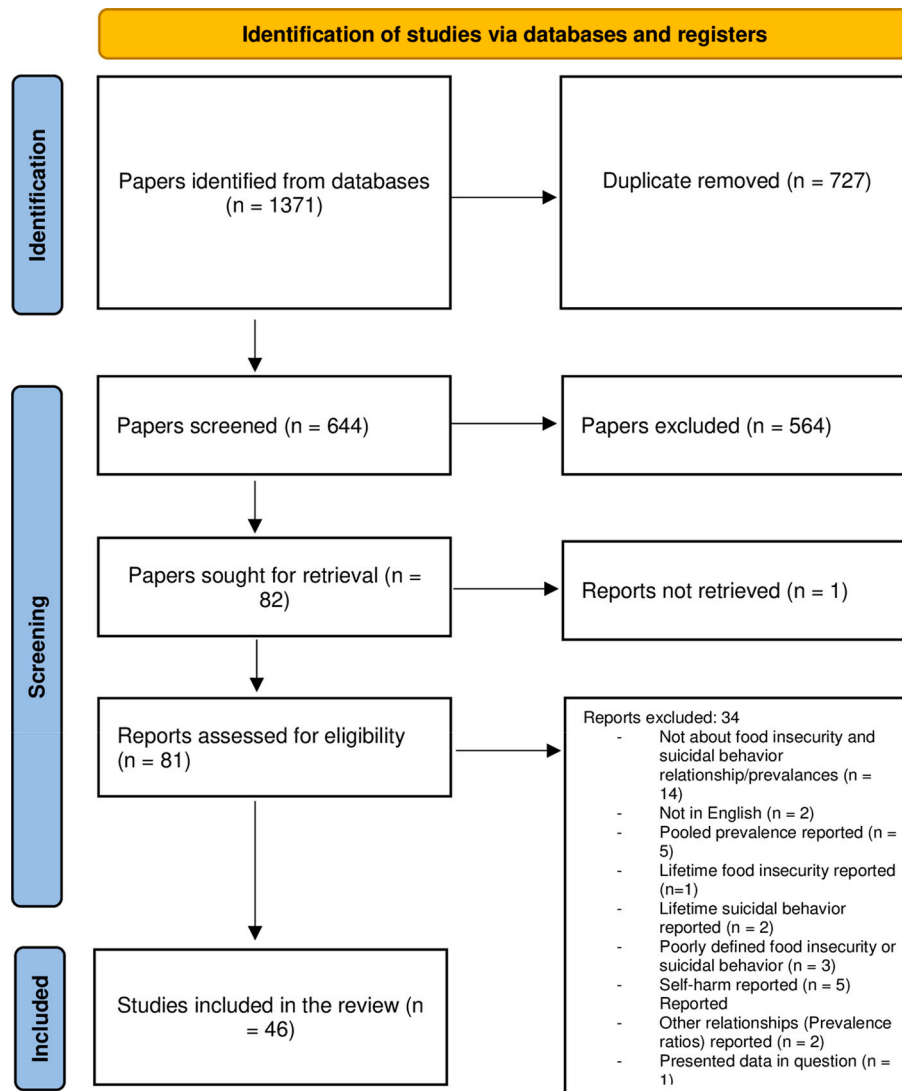
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- 2) The removal of a paper from the review lead to changes in the sample sizes and numbers, i.e., total individuals in the meta-analysis = 373,998; total individuals experiencing food insecurity = 73,305, total number of males (females) = 196,132 (161,553), and total LMICs = 22.
- 3) Table 1 was changed after the removal of the row with the study from [Arat, 2017](#).
- 4) The study from [Arat, 2017](#) affected the section on relationships. No changes were needed in the meta-analysis of prevalences. In this section, changes were made to the numbers (total involved and those with food insecurity), study with smallest odds, relationships' strength, figures (Figs. 6, 7, and 8), and subgroup analysis [Table 4]. However, the re-analysis did not affect the sensitivity analysis or the analysis of unspecified suicidal behaviors.

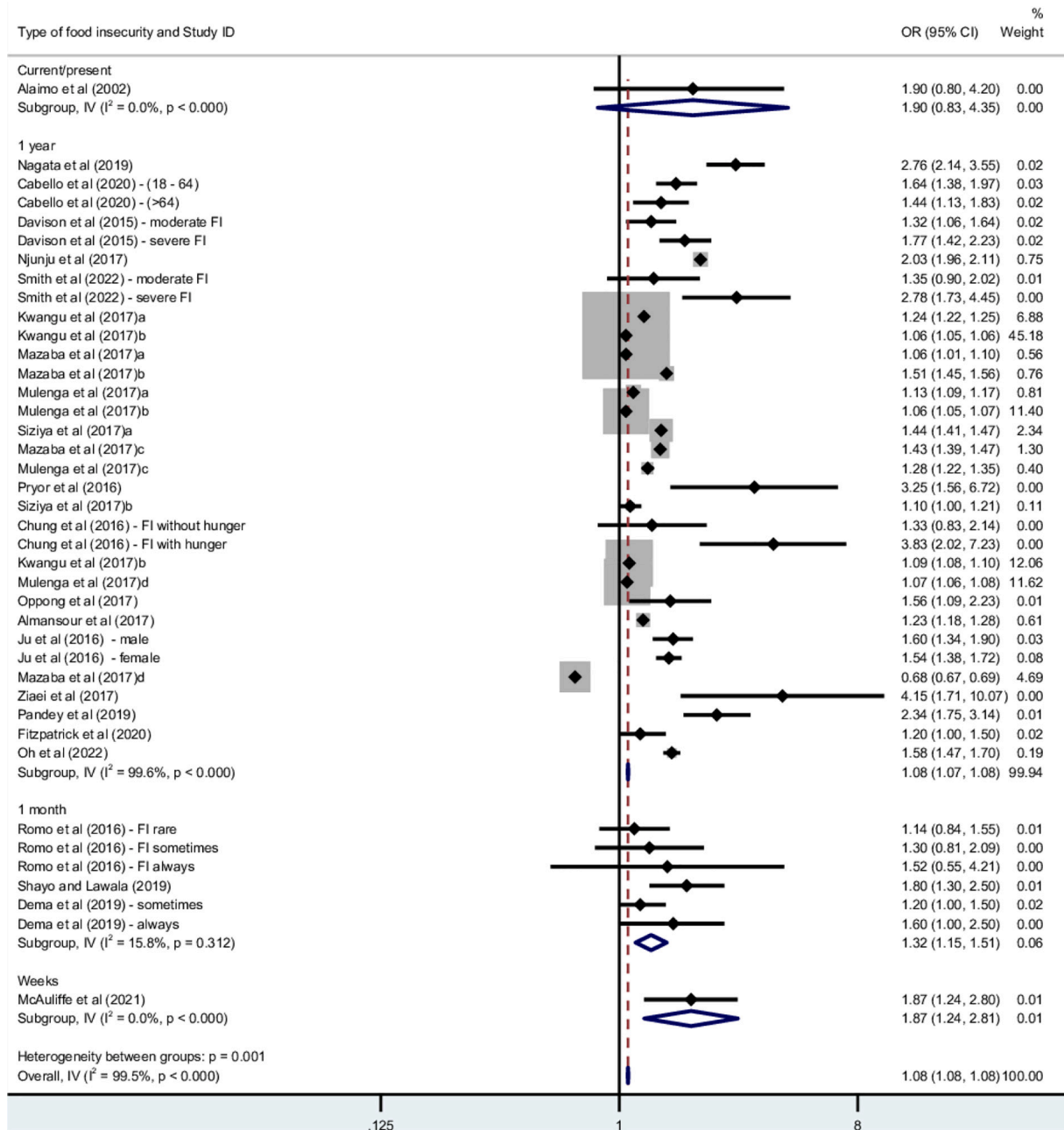
Suicidal ideations

- a) Numbers: Total studies = 30, overall sample = 347,394, and total with food insecurity = 65,574.

- b) Study with the smallest odds = 0.680 ([Mulenga et al., 2017](#)).
- c) Relationship strength: 1.078 (95 % CI: 1.075–1.082; $I^2 = 99.5\%$, $p < 0.001$)
- d) The subgroup section was changed to “Based on subgroup analysis, the heterogeneity of the odds ratio between those experiencing food insecurity and suicide ideation was significant in the following subgroups: (i) study design: with cohort studies having higher odds than cross-sectional studies; (ii) country income status: the likelihood for suicide ideation among individuals with food insecurity increased with the countries' economic groups; (iii) continent: all studies from the different continents showed an increased likelihood of suicide ideation among individuals experiencing food insecurity. Europe had the highest increase followed by North America, South America, Africa, Oceania, and least in Asia; (iv) study group: all groups had a significant relationship of increasing the likelihood and the odds were highest among the general population; (v) period of food insecurity assessed: the period was associated with suicide ideation among individuals experiencing food insecurity, with ‘past week’ having the highest likelihood of increasing suicide ideation

among individuals experiencing food insecurity; (vi) the duration of suicidal behavior assessed: only the past two weeks and past 12 months were related to a significant increase in the odds of suicide ideation and food insecurity; and (vii) the use of validated tools for assessing food insecurity was associated with having a higher likelihood of suicide ideation.”

e) Fig. 6.



f) Table 4: Subgroup analysis for the relationship between suicide behavior and food insecurity.

Variable	Sub-groups	Suicide ideation			Suicide plans			Suicide attempts			Unspecified suicide behavior		
		Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)	Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)	Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)	Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)
Study design	Cohort	0	3250 (1.569–6.745) *	8.77 (0.003)	–	–	N/A	0	2.020 (0.499–8.173)	0.11 (0.001)	–	–	N/A
	Cross-sectional	39	1.078 (1.075–1.082) *		5	1.361 (1.257–1.473) *		17	1.588 (1.452–1.736) *		6	1.127 (1.049–1.211) *	
Country income status	High-income countries	13	1.430 (1.399–1.462) *	783.04 (<0.001)	0	1.600 (1.448–1.768) *	39.61 (<0.001)	4	2.033 (1.702–2.428) *	16.73 (<0.001)	–	–	10.12 (0.006)
	Upper middle-income countries	5	1.122 (1.113–1.132) *		2	1.356 (1.110–1.656) *		1	1.158 (0.731–1.835)		2	1.118 (1.035–1.207) *	
	Lower middle-income countries	16	1.063 (1.059–1.067) *		1	0.847 (0.714–1.005)		7	1.325 (1.178–1.491) *		1	1.027 (0.817–1.292)	
	Low-income countries	–	–		–	–		–	–		1	2.468 (1.497–4.068) *	
Continent	Africa	4	1.079 (1.072–1.086) *	976.46 (<0.001)	0	1.610 (1.101–2.355) *	53.33 (<0.001)	2	1.587 (1.305–1.930) *	25.96 (<0.001)	6	1.127 (1.049–1.211) *	N/A
	Asia	16	1.065 (1.061–1.069) *		0	0.720 (0.595–0.872) *		4	1.196 (1.032–1.386) *		–	–	
	Europe	0	3.250 (1.569–6.745) *		–	–		–	–		–	–	
	North America	6	1.590 (1.497–1.688) *		0	1.600 (1.448–1.768) *		2	2.221 (1.824–2.705) *		–	–	
	South America	4	1.414 (1.387–1.442) *		2	1.356 (1.110–1.656) *		1	1.158 (0.731–1.835)		–	–	
	Oceania	1	1.067 (1.026–1.109) *		–	–		1	1.392 (0.926–2.093)		–	–	
Study population	Adolescents still in school	25	1.076 (1.073–1.080) *	280.07 (<0.001)	4	1.034 (0.908–1.177)	2.36 (0.125)	11	1.335 (1.196–1.489) *	33.55 (<0.001)	1	1.130 (0.893–1.429)	7.86 (0.164)
	Males	–	–		–	–		–	–		0	1.099 (0.960–1.258)	
	Older persons	3	1.578 (1.571–1.882) *		–	–		1	3.538 (2.186–5.727) *		–	–	
	General population	8	1.725 (1.574–1.890) *		–	–		2	1.940 (1.512–2.489) *		–	–	
	Females	–	–		–	–		0	2.020 (0.499–8.173)		0	1.170 (0.671–2.040)	
	College students	0	1.580 (1.469–1.699) *		0	1.600 (1.448–1.768) *		0	2.270 (1.832–2.813) *		–	–	
	HIV patients	–	–		–	–		–	–		0	2.260 (1.058–4.829)	
	Hurricane Harvey survivors	0	1.200 (0.980–1.470) *		–	–		–	–		–	–	
	Pregnant women	–	–		–	–		–	–		0	5.340 (1.262–22.601)	

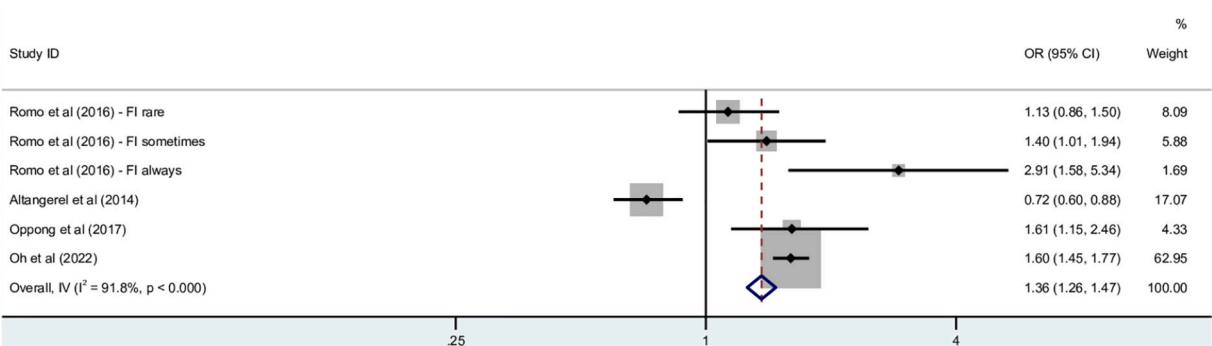
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Variable	Sub-groups	Suicide ideation			Suicide plans			Suicide attempts			Unspecified suicide behavior		
		Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)	Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)	Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)	Degree of freedom	Pooled OR (95 % Confidence interval)	Test of difference Q (p-value)
Method of assessing food insecurity	Self-report	30	1.078 (1.075–1.082) *	33.14 (<0.001)	2	1.362 (1.249–1.484) *	0 (0.970)	15	1.557 (1.417–1.712) *	7.93 (0.019)	3	1.196 (0.971–1.473)	0.35 (0.552)
	Validated tools	9	1.448 (1.310–1.601) *	-	2	1.356 (1.110–1.656) *		0	2.400 (1.723–3.344) *		2	1.118 (1.035–1.207)	
	Record review	–	–		–	–		1	1.158 (0.731–1.835)		–	–	
Period of food insecurity assessed	Current/ present	0	1.900 (0.829–4.353)	17.37 (0.001)	–	–	2.14 (0.143)	0	5.000 (1.706–14.653) *	3.86 (0.277)	–	–	4.50 (0.212)
	Past week	0	1.870 (1.244–2.810) *		–	–		–	–		0	1.170 (0.671–2.040)	
	Past month	5	1.320 (1.153–1.512) *		2	1.356 (1.110–1.656) *		4	1.737 (1.475–2.045) *		1	1.124 (0.984–1.284)	
	Past 6 month	–	–		–	–		0	2.020 (0.499–8.173)		0	5.340 (1.262–22.601)	
	Past 12 months	31	1.078 (1.075–1.082) *		1	1.601 (1.453–1.763)		10	1.865 (1.653–2.103) *		2	1.121 (1.028–1.223)	
Duration of suicide behavior assessed	Past 2 weeks	1	1.876 (1.301–2.704)	8.81 (0.003)	–	–	N/A	0	5.000 (1.706–14.653) *	4.40 (0.036)	–	–	0 (0.968)
	Past month	–	–		–	–		–	–		2	1.129 (1.029–1.237)	
	Past 12 months	38	1.078 (1.075–1.082) *		5	1.361 (1.257–1.473) *		17	1.577 (1.442–1.724) *		3	1.125 (1.002–1.263)	

Suicide plans

- a) Numbers: Total studies = four, overall sample = 109,078, and total with food insecurity = 33,977.
- b) Study with the smallest odds = 0.720 (Altangerel et al., 2014)
- c) Relationship strength: 1.361 (95 % CI: 1.257–1.473; $I^2 = 91.8\%$, $p < 0.001$)
- d) The subgroup section was changed to “The countries' income status and continent significantly contributed to the heterogeneity of the pooled odds ratio. The increase in the likelihood of suicide plans among individuals experiencing food insecurity was lowest among LMICs. The likelihood of suicide plans among individuals experiencing food insecurity was reduced in Asia by 28%. However, the likelihood increased in the rest of the continents with Africa having the highest odds followed by North America, then South America.”
- e) Fig. 7

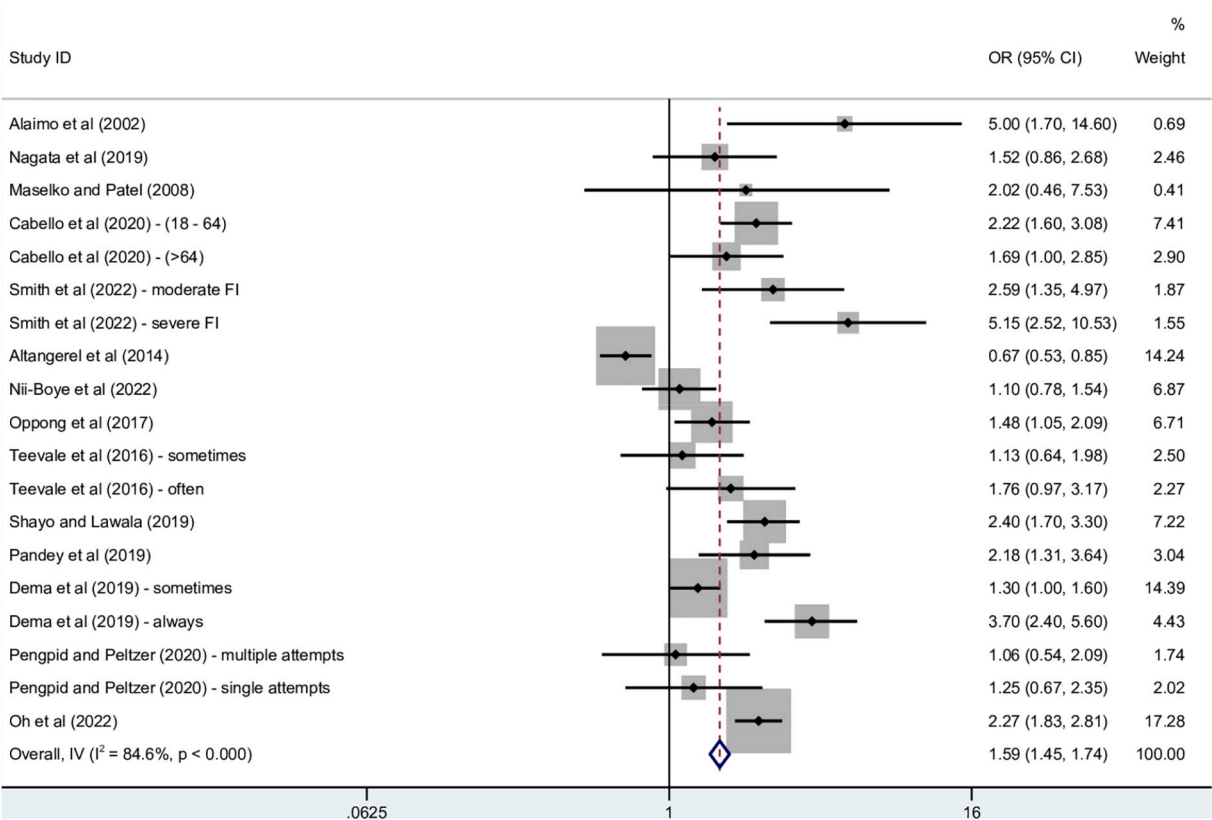


Suicide attempts

- a) Numbers: Total studies = 14, overall sample = 231,640, and total with food insecurity = 49,628.
- b) Study with the smallest odds = 0.67 (Altangerel et al., 2014)

- c) Relationship strength: 1.589 (95 % CI: 1.453–1.737; $I^2 = 84.6\%$, $p < 0.001$)
- d) The subgroup section was changed to “Almost all examined subgroups were statistically responsible for the heterogeneity of the study findings showing the relationship between suicide attempts and food insecurity, except for the period of food insecurity assessed. For study design, only cross-sectional studies showed a significant relationship, and it increased the likelihood of suicide attempts among individuals experiencing food insecurity. The relationship between the country's income status significantly increased the likelihood of suicide attempts among individuals experiencing food insecurity, with the highest increase in odds coming from studies among HICs. For continents, the likelihood of suicide attempts among individuals experiencing food insecurity was statistically significantly increased in the African, Asia, and North American continents. In relation to the study group, older individuals had the highest odds of having suicide attempts, followed by college students, the general population, and adolescents. The use of validated

- tools to assess food insecurity showed a significant increase in the odds of suicide attempts. The increase was lower when food insecurity was captured from participants' medical records.”
- e) Fig. 8



Highlights

- 1) The third bullet changed to “All other types of suicidal behaviors had a positive significant relationship with food insecurity.”

The authors would like to apologise for any inconvenience caused.

References

Altangerel, U., Liou, J.-C., Yeh, P.-M., 2014. Prevalence and predictors of suicidal behavior among Mongolian high school students. *Community Ment. Health J.* 50 (3), 362–372. <https://doi.org/10.1007/s10597-013-9657-8>.

Arat, G., 2017. The link between nutrition and mental health in sub-Saharan African adolescents: findings from the global school-based health survey. *Glob. Soc. Welf.* 4, 31–40. <https://doi.org/10.1007/s40609-016-0046-4>.

Mulenga, D., Kwangu, M., Njunju, E.M., Siziya, S., Mazaba, M.L., 2017. Suicidal ideation among in-school adolescents in Morocco. In: Mazaba, M.L., Siziya, S., Merrick, J. (Eds.), *Suicide: A Global View on Suicidal Ideation Among Adolescents*. NOVA Biomedical, pp. 175–182.

Stearse, T., Patalay, P., Kaggwa, M.M., Pitman, A., 2024. Correspondence: Food insecurity and the risk of suicidal thoughts and behaviours. *J. Affect. Disord.* 359, 253–254. <https://doi.org/10.1016/j.jad.2024.05.100>.

Discussion

- 1) Statements related to explaining the relationships affected by the re-analysis following were removed: “However, a negative relationship was found between food insecurity and suicide attempts,” and the sentence prior was changed to “The results also showed a positive relationship between experiencing food insecurity and suicidal behaviors.”

Limitations

- 1) The following statement was removed: “Another limitation in the present study was that the authors could not clearly identify any reasons for the differences in the relationships between food insecurity and suicidal behaviors among HIC and lower income countries.”