Title: Prevalence and correlates of multiple suicide attempts among adolescents aged 12-15 years from 61 countries in Africa, Asia, and the Americas

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ABSTRACT

Suicide is the fourth leading cause of death worldwide in young people aged 15 to 19 years. However, little is known about the correlates of multiple suicide attempts in adolescents, especially from a global perspective. Therefore, the aim of the present study was to investigate the association of putative physical, behavioral, and social correlates with multiple suicide attempts among adolescents aged 12-15 years from 61 countries. Data from the Global school-based Student Health Survey (2009-2017) were analyzed. Multiple

suicide attempts was classified as having attempted suicide at least twice in the past 12 months. Multivariable logistic regression analyses were conducted to assess the potential correlates. Data on 162,994 adolescents [mean (SD) age 13.8 (0.9) years; 50.8% boys] were analyzed. The overall prevalence of multiple suicide attempts was 4.4% [range 1.2% (Laos) to 13.8% (Ghana)]. Among those who had attempted suicide at least once in the past 12 months, in the overall sample, food insecurity, smoking, alcohol consumption, cannabis use, amphetamine use, sedentary behavior, sexual intercourse, sleep problems, loneliness, no close friends, and bullying victimization were all independently associated with higher odds for multiple suicide attempts although some regional differences were observed. Our study results indicate potential target factors that could be addressed amongst those who had attempted suicide in the past to reduce future suicide attempts and possibly completed suicides. Furthermore, it is possible that region-specific interventions are necessary.

Key Words: Multiple suicide attempts, Repeated suicide attempts, Adolescents, Correlates, Epidemiology, Multi-country study

INTRODUCTION

Suicide is death caused by injuring oneself with the intent to die (Centers for Disease Control and Prevention, 2021). Each year, it is estimated that more than 700,000 people die by suicide. In those aged 15 to 19 years, suicide is the fourth leading cause of death worldwide, and 77% of suicides occur in low economic settings (World Health Organization, 2021). One of the most important risk factors for death by suicide are previous suicide attempts (Hawton, K. and van Heeringen, 2009). Indeed, the risk of completed suicide is higher in individuals with a higher number of lifetime suicide attempts (Parra-Uribe et al., 2017). Moreover, the risk of completed suicide is 50–100 times higher if there is at least one previous suicide attempt in a person's case history (Hawton and van Heeringen, 2009,Owens et al., 2002). Owing to the high global prevalence of suicide among adolescents, and the higher risk for completed suicides in those who attempt suicide multiple times, it is important to identify correlates of multiple suicide attempts to inform targeted intervention and policy.

While there is a large body of literature identifying important correlates of suicide attempts, less is known about the correlates of multiple suicide attempts especially amongst adolescents. In one study, conducted with 36 male and 76 female adolescents from one inner city hospital in Chicago USA, it was found that adolescents most likely to re-attempt suicide within 12 months present with either substance abuse, non-affective psychotic disorders, chronic medical conditions, or a history of sexual abuse (Vajda and Steinbeck, 2000). In another study of 2744 adolescents (median age 18 years) from Liberia, it was identified that having no close friends, loneliness, having been frequently physically attacked, having ever used amphetamine and fast-food intake were associated with multiple suicide attempts (Pengpid and Peltzer, 2020b). Furthermore, one study utilizing data from the 2019 School-based Chinese Adolescents Health Survey (n = 20,702) found that peer problems, emotional problems, conduct problems, and hyperactivity were associated with an increased risk of multiple suicide attempts (Guo et al., 2019). Other single country studies have found similar findings (Guo et al., 2018,Pengpid and Peltzer, 2020a,Rosenberg et al., 2005,Esposito et al., 2003). While existing literature provides some information on potential important correlates of multiple suicide attempts, it is limited through the utilization of single country data and relatively small samples. It is clear that further research is needed utilizing multi-country data with population representative samples. Multi-country data is important as it allows for the comparison of global estimates, and can clarify whether risk factors are context-specific, allowing for better targeting of global efforts to address this important issue.

Given this background, the aim of the present study was to investigate the association between 17 putative physical, behavioral, and social correlates with multiple suicide attempts in a sample of 162,994 adolescents aged 12-15 years from 61 countries from five WHO regions [Africa region (AFR); Region of the Americas (AMR); Eastern Mediterranean Region (EMR); South-East Asia Region (SEAR); and Western Pacific Region (WPR)].

METHODS

Publicly available data from the Global school-based Student Health Survey (GSHS) were analyzed. Details on this survey can be found at http://www.who.int/chp/gshs and http://www.cdc.gov/gshs. Briefly, the GSHS was jointly developed by the WHO and the US Centers for Disease Control and Prevention (CDC), and other UN allies. The core aim of this survey was to assess and quantify risk and protective factors of major non-communicable diseases. The survey draws content from the CDC Youth Risk Behavior Survey (YRBS) for which test-retest reliability has been established (Brener et al., 1995). The survey used a standardized two-stage probability sampling design for the selection process within each participating country. For the first stage, schools were selected with probability proportional to size sampling. The second stage involved the random selection of classrooms which included students aged 13-15 years within each selected school. All students in the selected classrooms were eligible to participate in the survey regardless of age. Data collection took place during one regular class period. The questionnaire was translated into the local language in each country and consisted of multiple choice response options; students recorded their response on computer scannable sheets. All GSHS surveys were approved, in each country, by both a national government administration (most often the Ministry of Health or Education) and an institutional review board or ethics committee. Student privacy was protected through anonymous and voluntary participation, and informed consent was obtained as appropriate from the students, parents and/or school officials. Data were weighted for non-response and probability selection.

From all publicly available data, we selected all nationally representative datasets that included the variable on suicide attempts for the current analysis. If there were more than two datasets from the same country, we chose the most recent dataset. Thus, a total of 61 countries were included in the current study. The characteristics of each country or survey are provided in **Table 1**. For the included countries, the survey was conducted between 2009 and 2017, and the countries were from five WHO regions (AFR n=12; AMR n=19; EMR n=7; SEAR n=9; WPR n=14).

Suicide attempt

Suicide attempt was assessed by the question "During the past 12 months, how many times did you actually attempt suicide?" Single suicide attempts were defined as answering "once" to this question, while multiple suicide attempts were defined as two or more suicide attempts.

Correlates

A total of 17 potential correlates of multiple suicide attempts were selected based on past literature (Pengpid and Peltzer, 2020b). The sociodemographic variables included age, sex, and socioeconomic status. Food insecurity was used as a proxy for socioeconomic status as there were no variables on socioeconomic status in the GSHS, and this was assessed by the question "During the past 30 days, how often did you go hungry because there was not enough food in your home?" Answer options were categorized as 'never', 'rarely/sometimes' (moderate food insecurity), and 'most of the time/always' (severe food insecurity). Other correlates included the following:

Smoking: referred to the use of any form of tobacco on at least one day in the past 30 days.

Alcohol consumption: was defined as having had at least one drink containing alcohol in the past 30 days.

Cannabis use: was defined as having used marijuana on at least one day in the past 30 days.

Amphetamine use: was defined as having used amphetamines (metamphetamines) at least once in life.

Fast-food consumption: Those who consumed fast--food on at least one day in the past 7 days were considered to be consumers of fast-food.

Carbonated soft-drink consumption: Those who consumed carbonated soft-drinks in the past 30 days (excluding diet soft-drinks) were considered to be consumers of carbonated soft-drink.

Low physical activity: referred to not meeting the WHO's recommendations on physical activity for children and young adults (World Health Organization, 2010) (i.e., any kind of physical activity of at least 60 minutes everyday during the past 7 days).

Sedentary behavior: was assessed by the question "How much time do you spend during a typical or usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities?" This excluded time at school and when doing homework. This variable was used as a dichotomized variable (≥3 hours/day or not), in accordance with previous research (Guthold et al., 2010).

Sexual intercourse: those who answered affirmatively to the question "Have you ever had sexual intercourse?" were considered to have had sexual intercourse.

Anxiety-induced sleep problems: was defined as replying 'most of the time' or 'always' to the question "During the past 12 months, how often have you been so worried about something that you could not sleep at night?" (Carvalho et al., 2019).

Loneliness: was assessed with the question "During the past 12 months, how often have you felt lonely?" with answer options 'never', 'rarely', 'sometimes', 'most of the time', and 'always'. This variable was dichotomized as never, rarely, sometimes (coded=0) and most of the time, always (coded=1) (Glozah et al., 2018).

Close friends: referred to the number of close friends a student has. This variable was dichotomized into at least one (coded 0) and none (coded 1).

Low parental support/monitoring: was defined as answering 'rarely' or 'never' to all of the following three questions: (a) 'during the past 30 days, how often did your parents or guardians check to see if your homework was done?'; (b) 'during the past 30 days, how often did your parents or guardians understand your problems and worries?'; and (c) 'during the past 30 days, how often did your parents or guardians really know what you were doing with your free time?' (Romo et al., 2016).

Bullying victimization: was defined as being bullied on at least one day in the past 30 days.

Statistical analysis

Statistical analyses were performed with Stata 14.2 (Stata Corp LP, College station, Texas). The analysis was restricted to those aged 12-15 years as most students were within this age range and the exact age outside of this age range was not provided. Age- and sex-adjusted prevalence of single and multiple suicide attempts by country was calculated using the proportions derived from the overall sample as the standard population. The association between each correlate (exposure) and single or multiple suicide attempts (outcome) was assessed with multivariable multinomial logistic regression, while adjusting for age, sex, food insecurity, and country. Estimates for age, sex, and food insecurity were obtained from a model that mutually adjusted for these factors and country. Next, we also conducted multivariable binary logistic

regression with multiple suicide attempts as the outcome in a sample restricted to those who attempted suicide at least once (n=31,907).

All regression analyses were conducted for the sample including all countries, and also for region-wise samples. Adjustment for country was done by including dummy variables for each country in the model as in previous GSHS publications (McKinnon et al., 2016,Vancampfort et al., 2018). The regression analyses included all countries for which data were available but did not include all 61 countries as some countries did not provide information for some of the variables. The complete list of data availability per country is shown in **Table S1** of the Appendix. Given that in EMR, data on alcohol consumption was only available from Lebanon, while no countries in the EMR had data on sexual intercourse, region-wise estimates for EMR were not obtained for these correlates.

All variables were included in the regression analysis as categorical variables. Complete case analysis was done. Sampling weights and the clustered sampling design of the surveys were taken into account. Results from the logistic regression analyses are presented as odds ratios (ORs) with 95% confidence intervals (CIs). The level of statistical significance was set at $p<0.05$.

RESULTS

The final sample consisted of 162,994 adolescents aged 12-15 years (AFR n=17,880; AMR n=55,162; EMR n=16,237; SEAR n=31,497; WPR n=42,218). Overall, the mean (SD) age was 13.8 (0.9) years, and 50.8% were boys. The mean (SD) age for boys and girls were 13.8 (0.9) years and 13.7 (1.0) years, respectively. The overall prevalence of single and multiple suicide attempts was 6.2% and 4.4%, respectively. The age- and sex-adjusted prevalence of single and multiple suicide attempts are provided in **Table 1** and **Figure 1**. The prevalence of single suicide attempts ranged from 2.3% (Indonesia) to 20.5% (Kiribati), while that of multiple suicide attempts ranged from 1.2% (Laos) to 13.8% (Ghana). The prevalence of the correlates (overall and by region) is provided in **Table S2** of the Appendix. The correlates of single and multiple suicide attempts estimated by multivariable multinomial logistic regression in the overall sample are shown

in **Table 2**. All the correlates assessed were significantly associated with greater odds for single suicide attempts with the exception of sex and soft-drink consumption. Particularly high odds were found for cannabis use (OR=6.53) and amphetamine use (OR=8.15). For multiple suicide attempts, only age was not a significant correlate, but all other correlates showed significant associations. In contrast to single suicide attempts, boys were less likely to have engaged in multiple suicide attempts. All significant correlates were more strongly associated with multiple suicide attempts than single suicide attempts with the exception of low parental support. Region-wise analysis showed that food insecurity, smoking, alcohol consumption, cannabis use, amphetamine use, sexual intercourse, sleep problems, loneliness, no close friends, and bullying victimization showed consistent positive associations with suicide attempts with the OR being higher for multiple suicide attempts across all regions (**Table 3**). For other factors, significant associations were not observed across all regions. As for low physical activity, opposite associations were observed depending on the region. When the analysis was restricted to those who attempted suicide, in the overall sample, food insecurity, smoking, alcohol consumption, cannabis use, amphetamine use, sedentary behavior, sexual intercourse, sleep problems, loneliness, no close friends, and bullying victimization were all associated with higher odds for multiple suicide attempts (**Table 4**). Smoking, alcohol consumption, cannabis use, amphetamine use, sedentary behavior, sexual intercourse, sleep problems, and loneliness were associated with higher odds for multiple suicide attempts across all regions, but other factors were not significant in all regions. For example, boys were significantly less likely to engage in multiple suicide attempts only in AMR, while food insecurity was not a significant correlate of multiple suicide attempts only in SEAR and WPR. Furthermore, fast-food consumption was a significant correlate only in AFR, low physical activity only in EMR and SEAR, and low parental support only in AMR.

DISCUSSION

Main findings

In the present study including large nationally representative samples of adolescents from 61 countries, we found that the prevalence of multiple suicide attempts was high and that almost all correlates assessed were associated more strongly with multiple suicide attempts than with single suicide attempts. Among those who

attempted suicide, in the overall sample, food insecurity, smoking, alcohol consumption, cannabis use, amphetamine use, sedentary behavior, sexual intercourse, sleep problems, loneliness, no close friends, and bullying victimization were all associated with higher odds for multiple suicide attempts, compared to single suicide attempts. Interestingly, only smoking, alcohol consumption, cannabis use, amphetamine use, sedentary behavior, sexual intercourse, sleep problems, and loneliness were associated with higher odds for multiple suicide attempts across all regions. Other factors were found to have region-specific associations.

Interpretation of findings

Findings from the present study in relation to identified physical, social, and behavioral correlates of multiple suicide attempts both support and add to previous literature. It supports previous literature through confirming that a range of physical, social, and behavioral correlates are associated with multiple suicide attempts and adds to the literature through, for the first time, confirming that such associations hold in a large multi-country sample with nationally representative data (Vajda and Steinbeck, 2000,Pengpid and Peltzer, 2020b,Guo et al., 2019,Guo et al., 2018,Pengpid and Peltzer, 2020a,Rosenberg et al., 2005,Esposito et al., 2003). It further adds to the existing literature through highlighting that there are region-specific differences in relation to correlates of multiple suicide attempts.

There are plausible mechanisms that link the correlates identified in this study to multiple suicide attempts. In terms of food insecurity, low caloric intake has been associated with impaired hypothalamic-pituitary-adrenal (HPA) axis reactivity to stress, and this in turn, may lead to an increased risk for suicidality (Koyanagi et al., 2019). In addition, food insecurity can also be a proxy of low socioeconomic status, and economic difficulties may increase risk for suicide attempts. Smoking, alcohol consumption, cannabis use, and amphetamine use may be linked to suicide attempts as people suffering from low-self-esteem or depression, both strongly associated with suicide attempts, may self-medicate themselves with nicotine, alcohol or illicit substances (Pandey et al., 2019). Moreover, consumption of these substances may lead to multiple suicide attempts as they are associated with impairment of memory, judgement, and personality (Volkow et al., 2014,Littlefield et al., 2012,Mizoguchi and Yamada, 2019). It has been suggested that high

levels of sedentary behavior may be associated with suicidality through increasing risk for depressive symptomatology, psychological distress and low self-esteem, all of which are risk factors for a suicide attempt (Vancampfort et al., 2019). Next, sexual intercourse in early adolescence may increase risk for suicidal behavior via mental disorders, potential distress resulting from sexual relationships, and sexual violence particularly among girls (Smith et al., 2020). In terms of sleep problems, it may be that these are a consequence of cognitive difficulties such as hopelessness and rumination that are in turn associated with suicide (Koyawala et al., 2015). Loneliness, bullying/victimization, and no close friends are likely associated with suicide attempts through increasing one's feelings of distress, hopelessness, and not having anyone to turn to during times of need (Samaritans, 2019). This aligns with the Interpersonal Theory of Suicide (Van Orden et al., 2010), where suicide is thought to be a result of thwarted belongingness and perceived burdensomeness. Moreover, repeated exposure to bullying (and other violence) may habituate an individual to the fear and pain involved in suicide, granting an acquired capability.

It is also important to note that there were some regional differences in terms of the correlates of multiple suicide attempts. Although the explanation behind these between-region differences is beyond the scope of the present study, some region-specific factors apart from culture may impact differentially on multiple suicide attempts. For example, the fact that fast-food consumption was associated with multiple suicide attempts among those who attempted suicide only in AFR may be related with the content of fast-food which may vary substantially between regions. Furthermore, the fact that low physical activity was associated with multiple suicide attempts only in EMR and SEAR may be explained by differences in the key domains of physical activity that adolescents participate in between regions, such as group sport versus household chores/occupational.

Public health implications

The identified physical (i.e., sex), social (i.e., food insecurity, loneliness, no close friends, low parental support, and bullying victimization) and behavioral (i.e., smoking, alcohol consumption, cannabis use, amphetamine use, sedentary behavior, sexual intercourse, sleep problems, low physical activity, and fast-

food consumption) correlates of multiple suicide attempts highlight the multifactorial etiology of this behavior (Hawton, Keith and Pirkis, 2017). Such multifactorial etiology is indeed represented in several theories that relate to suicide such as the “Three-Step Theory”. First, the theory hypothesizes that suicide ideation results from the combination of pain (usually psychological pain) and hopelessness. Second, among those experiencing both pain and hopelessness, connectedness is a key protective factor against escalating ideation. Third, the theory views the progression from ideation to attempts as facilitated by dispositional, acquired, and practical contributors to the capacity to attempt suicide (Klonsky and May, 2015). Indeed, owing to this multifactorial etiology, if suicide prevention (including multiple suicide attempt prevention) policies are to be effective, they must include a range of initiatives. First, universal interventions may be considered that aim to reduce suicide attempts on a global scale; such initiatives may include, for example, reducing access to means for suicide and initiatives in relation to school and public education on suicide. Second, interventions may wish to specifically focus on sub-groups of the population such as those who have previously attempted suicide and thus at significantly increased risk of multiple suicide attempts and ultimately completed suicides. Examples of such interventions include psychological therapy for people with substance use complications, and specific programmes for people who have engaged in risky sexual behaviour such as early sexual debut or experience bullying/victimization (Hawton, Keith and Pirkis, 2017). Moreover, interventions to reduce feelings of loneliness among adolescents may also be beneficial. Such interventions may focus on promotion of group physical activity which at the same time may be effective at reducing sedentary behavior (Haugen et al., 2013).

It should be noted, however, that interventions to prevent multiple suicide attempts among adolescents may not be universal. It is indeed important to consider the social, cultural, and economic setting in which adolescents reside. In our study, among those who attempted suicide, potentially modifiable risk factors such as food insecurity, fast-food consumption, low physical activity, no close friends, low parental support, and bullying victimization were not identified as significant correlates of multiple suicide attempts across all regions, and this implies that region-specific interventions may be necessary. For example, schemes such as food banks and meals on wheel to address food insecurity for the prevention of multiple suicide attempts

may only be effective in areas where this correlate was found to have a significant association (i.e., AFR, AMR, EMR).

Strength and limitations

The nationally representative multi-country data is a clear strength of the present study. However, findings must be interpreted in light of the study's limitations. First, data on multiple suicide attempts and multiple correlates of were self-reported, potentially introducing recall and social desirability bias. Second, varying degrees of bias may have been introduced by interviewing only schoolchildren, especially in countries where schooling attendance rates are low. Third, since the countries were not randomly selected, our data are not representative of the WHO regions. In particular, the data mostly consisted of low- and middle-income countries and data from some high-income countries (e.g., Japan, Singapore) were missing. Fourth, data on degree or method of suicide attempts were not available. Future studies should take these factors into account to obtain a more in-depth understanding of the correlates of multiple suicide attempts. Finally, we defer from ascribing causal direction due to the cross-sectional nature of this study.

Conclusion

In this multi-country study utilizing nationally representative data, we identified several physical, social, and behavioral correlates of multiple suicide attempts highlighting the complex etiology of suicidal behavior per se. Among those who attempted suicide at least once, most correlates examined in this study were associated with further suicide attempts, suggesting that addressing these correlates among those who attempted suicide may lead to a reduction in future suicide attempts and completed suicides. Our findings suggest that to prevent against multiple suicide attempts, a range of initiatives should be utilized (e.g., reducing access to means of suicide, psychological therapy, and promotion of positive lifestyle behaviors). Importantly, differences between correlates of multiple suicide attempts were observed between global regions. Thus, it is likely that region-specific initiatives are needed to prevent against multiple suicide attempts across the world. Future research of a qualitative nature should aim to elucidate why these differences exist to further inform targeted interventions.

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Table 1 Survey characteristics and age- and sex-adjusted prevalence of single and multiple suicide attempts

Region	Country	Year	Response rate (%)	N[a]	SSA (%)	MSA (%)
AFR	Benin	2016	78	717	5.8 [3.9,8.4]	4.6 [2.9,7.3]
	Ghana	2012	82	1,110	12.9 [9.6,17.2]	13.8 [10.5,17.8]
	Liberia	2017	71	541	12.0 [8.9,16.0]	11.7 [7.6,17.7]
	Malawi	2009	94	2,224	4.8 [3.1,7.4]	5.2 [2.6,10.3]
	Mauritania	2010	70	1,285	9.9 [5.6,16.7]	6.8 [3.5,12.8]
	Mauritius	2017	84	1,955	7.7 [6.4,9.3]	4.8 [3.9,5.8]
	Mozambique	2015	80	668	10.2 [7.6,13.5]	6.4 [3.2,12.3]
	Namibia	2013	89	1,936	15.2 [12.8,17.8]	10.3 [8.0,13.1]
	Seychelles	2015	82	2,061	10.8 [9.3,12.5]	9.7 [7.6,12.3]
	Sierra Leone	2017	82	1,450	9.9 [7.2,13.3]	7.3 [5.4,9.9]
	Swaziland	2013	97	1,318	8.5 [6.6,10.7]	4.9 [3.7,6.6]
	Tanzania	2014	87	2,615	6.3 [5.2,7.8]	4.4 [3.0,6.5]
	Total				8.2 [7.2,9.3]	7.0 [5.9,8.3]
AMR	Antigua & Barbuda	2009	67	1,235	6.5 [5.2,8.0]	5.4 [4.0,7.4]
	Argentina	2012	71	21,528	9.4 [8.5,10.3]	5.8 [5.1,6.7]
	Bahamas	2013	78	1,308	8.4 [7.0,10.1]	5.7 [4.0,8.1]
	Belize	2011	88	1,600	5.6 [4.1,7.7]	6.7 [5.6,7.9]
	Bolivia	2012	88	2,804	13.4 [11.7,15.2]	6.6 [5.6,7.7]
	Costa Rica	2009	72	2,265	6.3 [4.9,8.1]	2.2 [1.6,2.9]
	Curaçao	2015	83	1,498	6.9 [5.4,8.7]	5.2 [3.8,7.1]
	Dominica	2009	84	1,310	7.5 [5.8,9.7]	6.8 [5.3,8.7]
	Dominican Republic	2016	63	954	6.7 [5.5,8.1]	6.5 [3.5,11.7]
	El Salvador	2013	88	1,615	7.5 [6.1,9.2]	4.3 [3.1,6.0]
	Guatemala	2015	82	3,611	12.1 [9.5,15.2]	5.1 [3.8,6.9]
	Honduras	2012	79	1,486	9.8 [8.1,11.8]	6.8 [5.2,8.7]
	Jamaica	2017	60	1,061	10.0 [6.5,15.0]	9.1 [7.1,11.7]
	Paraguay	2017	87	1,972	6.5 [5.2,8.0]	3.4 [2.6,4.3]
	Peru	2010	85	2,359	11.3 [9.5,13.4]	6.0 [5.1,7.1]
	St. Kitts & Nevis	2011	70	1,471	7.1 [5.4,9.4]	8.0 [5.6,11.2]
	Suriname	2016	83	1,453	4.6 [3.4,6.2]	4.4 [3.1,6.1]
	Trinidad & Tobago	2017	89	2,763	6.7 [5.9,7.6]	6.7 [5.3,8.4]
	Uruguay	2012	77	2,869	5.5 [4.5,6.6]	2.3 [1.7,3.3]
	Total				9.8 [9.3,10.4]	5.9 [5.5,6.4]
EMR	Afghanistan	2014	79	1,493	7.3 [5.8,9.3]	5.2 [3.3,7.9]
	Iraq	2012	88	1,533	9.4 [7.5,11.7]	4.7 [3.6,6.1]
	Kuwait	2015	78	2,034	8.2 [6.3,10.5]	7.6 [5.9,9.8]

	Lebanon	2017	82	3,347	6.3 [5.3,7.6]	3.1 [2.2,4.3]
	Morocco	2016	91	3,975	7.1 [6.3,8.0]	5.4 [4.3,6.7]
	United Arab Emirates	2010	91	2,302	7.8 [6.2,9.8]	4.4 [3.7,5.3]
	Yemen	2014	75	1,553	8.0 [6.0,10.7]	6.6 [4.3,10.2]
	Total				8.1 [7.4,9.0]	5.4 [4.7,6.3]
SEAR	Bangladesh	2014	91	2,753	4.0 [3.1,5.1]	2.6 [1.7,4.1]
	Bhutan	2016	95	3,287	6.4 [5.5,7.4]	4.2 [3.3,5.2]
	East Timor	2015	79	1,631	6.4 [4.5,8.9]	2.9 [1.7,4.8]
	Indonesia	2015	94	8,806	2.3 [2.0,2.8]	1.6 [1.1,2.2]
	Maldives	2014	60	1,781	10.5 [7.7,14.1]	8.2 [4.8,13.5]
	Myanmar	2016	86	2,237	5.0 [3.8,6.6]	2.9 [1.9,4.4]
	Nepal	2015	69	4,616	6.0 [4.6,7.8]	4.1 [2.9,5.7]
	Sri Lanka	2016	89	2,254	4.9 [4.1,5.8]	1.5 [1.0,2.4]
	Thailand	2015	89	4,132	5.9 [4.5,7.7]	8.0 [6.2,10.3]
	Total				3.8 [3.5,4.3]	2.8 [2.4,3.2]
WPR	Brunei Darussalam	2014	65	1,824	3.5 [2.6,4.6]	1.6 [1.2,2.2]
	Cambodia	2013	85	1,812	3.7 [2.8,4.7]	2.9 [2.0,4.1]
	Fiji	2016	79	1,537	5.5 [4.2,7.2]	4.7 [2.5,8.7]
	French Polynesia	2015	70	1,902	5.1 [4.3,6.1]	4.8 [4,5.8.0]
	Kiribati	2011	85	1,340	20.5 [17.4,23.8]	10.3 [8.6,12.3]
	Laos	2015	70	1,644	3.6 [2.6,4.9]	1.2 [0.8,1.8]
	Malaysia	2012	89	16,273	3.8 [3.2,4.4]	3.3 [2.7,4.0]
	Mongolia	2013	88	3,707	6.0 [5.2,6.8]	3.4 [2.7,4.1]
	Philippines	2015	79	6,162	9.6 [7.9,11.7]	6.3 [4.8,8.1]
	Samoa	2017	59	1,058	12.8 [10.3,15.7]	9.3 [6.9,12.5]
	Solomon Islands	2011	85	925	17.1 [12.7,22.6]	12.7 [8.2,19.0]
	Tonga	2017	90	2,067	7.7 [6.6,8.9]	7.5 [6.1,9.1]
	Tuvalu	2013	90	679	4.1 [2.8,5.9]	5.3 [3.7,7.5]
	Vanuatu	2016	57	1,288	17.1 [14.8,19.7]	7.6 [5.7,9.9]
	Total				8.2 [6.9,9.9]	5.5 [4.5,6.8]

Abbreviations: AFR African Region; AMR Region of the Americas; EMR Eastern Mediterranean Region; SEAR South-East Asia Region; WPR Western Pacific Region; SSA Single suicide attempt; MSA Multiple suicide attempts

[a] Based on sample aged 12-15 years.

Table 2 Correlates of single and multiple suicide attempts (outcomes) estimated by multivariable multinomial logistic regression (overall sample)

Characteristic	Categories	SSA vs. no SA		MSA vs. no SA	
Age (years)[a]	12	1.00		1.00	
	13	1.17	[0.99,1.39]	1.20	[0.99,1.46]
	14	1.23*	[1.04,1.45]	1.12	[0.89,1.40]
	15	1.39***	[1.15,1.68]	1.12	[0.92,1.37]
Sex[a]	Boys vs. Girls	0.91	[0.83,1.00]	0.84**	[0.75,0.95]
Food insecurity[a]	Never	1.00		1.00	
	Moderate	1.43***	[1.28,1.59]	1.67***	[1.50,1.86]
	Severe	1.89***	[1.59,2.25]	2.72***	[2.31,3.20]
Smoking	Yes vs. No	4.16***	[3.43,5.04]	7.94***	[6.78,9.29]
Alcohol consumption	Yes vs. No	3.10***	[2.61,3.68]	6.46***	[5.34,7.81]
Cannabis use	Yes vs. No	6.53***	[4.97,8.57]	13.26***	[10.43,16.87]
Amphetamine use	Yes vs. No	8.15***	[6.17,10.76]	14.88***	[11.88,18.65]
Fast-food consumption	Yes vs. No	1.38***	[1.24,1.53]	1.50***	[1.31,1.72]
Soft-drink consumption	Yes vs. No	1.11	[0.96,1.29]	1.17*	[1.01,1.36]
Low physical activity	Yes vs. No	1.27**	[1.09,1.48]	1.39***	[1.19,1.64]
Sedentary behavior	Yes vs. No	1.25***	[1.12,1.39]	1.92***	[1.68,2.21]
Sexual intercourse	Yes vs. No	2.21***	[1.89,2.60]	3.63***	[2.98,4.41]
Sleep problems	Yes vs. No	2.63***	[2.27,3.05]	5.01***	[4.21,5.96]
Loneliness	Yes vs. No	2.59***	[2.27,2.96]	4.23***	[3.60,4.97]
Close friends	None vs. ≥1	2.98***	[2.45,3.63]	4.47***	[3.80,5.25]
Low parental support	Yes vs. No	1.78***	[1.57,2.01]	1.55***	[1.33,1.80]
Bullying victimization	Yes vs. No	2.83***	[2.54,3.15]	4.11***	[3.60,4.69]

Abbreviations: SSA Single suicide attempt; SA Suicide attempt; MSA Multiple suicide attempts
Models were adjusted for age, sex, food insecurity, and country.
[a] Estimates are based on a model mutually adjusted for age, sex, food insecurity, and country.
Data are odds ratio [95% confidence interval]
* p<0.05, ** p<0.01, *** p<0.001

Table 3 WHO region-wise correlates of single and multiple suicide attempts (outcomes) estimated by multivariable multinomial logistic regression

		AFR		**AMR**		**EMR**		**SEAR**		**WPR**	
Characteristic	Categories	SSA vs. no SA	MSA vs. no SA	SSA vs. no SA	MSA vs. no SA	SSA vs. no SA	MSA vs. no SA	SSA vs. no SA	MSA vs. no SA	SSA vs. no SA	MSA vs. no SA
Age (years)[a]	12	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	13	1.14	0.95	0.94	1.04	1.27	0.85	1.29	1.37	1.01	2.35**
		[0.73,1.76]	[0.63,1.43]	[0.75,1.17]	[0.71,1.53]	[0.88,1.82]	[0.55,1.32]	[1.00,1.67]	[0.99,1.90]	[0.58,1.74]	[1.30,4.27]
	14	1.50	0.75	0.93	1.13	1.33	0.86	1.09	1.01	1.37	3.11***
		[0.99,2.27]	[0.50,1.13]	[0.73,1.18]	[0.75,1.70]	[0.93,1.88]	[0.59,1.25]	[0.82,1.46]	[0.68,1.51]	[0.85,2.23]	[1.61,6.02]
	15	1.41	0.75	1.07	1.11	1.75**	0.93	1.12	1.05	1.70	2.85***
		[0.90,2.22]	[0.50,1.14]	[0.85,1.36]	[0.76,1.62]	[1.21,2.52]	[0.59,1.45]	[0.82,1.54]	[0.71,1.57]	[0.98,2.94]	[1.79,4.55]
Sex[a]	Boys vs. Girls	0.95	0.97	0.62***	0.45***	0.99	0.93	1.18	1.07	0.80	0.76*
		[0.78,1.15]	[0.75,1.24]	[0.54,0.72]	[0.38,0.53]	[0.83,1.18]	[0.74,1.18]	[0.98,1.41]	[0.84,1.37]	[0.63,1.00]	[0.58,0.98]
Food	Never	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
insecurity[a]	Moderate	1.30*	2.03***	1.44***	1.87***	1.71***	1.63***	1.39*	1.60***	1.41**	1.39**
		[1.03,1.64]	[1.61,2.56]	[1.30,1.61]	[1.60,2.17]	[1.32,2.22]	[1.26,2.09]	[1.08,1.80]	[1.28,1.99]	[1.12,1.79]	[1.10,1.75]
	Severe	1.87***	3.48***	1.71***	3.07***	1.88***	3.36***	2.18***	2.55***	1.66*	1.67**
		[1.36,2.59]	[2.53,4.79]	[1.27,2.31]	[2.31,4.07]	[1.35,2.63]	[2.53,4.46]	[1.52,3.13]	[1.76,3.70]	[1.06,2.59]	[1.13,2.46]
Smoking	Yes vs. No	4.45***	10.10***	2.71***	5.92***	4.97***	8.09***	4.36***	7.87***	4.54***	7.95***
		[3.50,5.65]	[7.39,13.80]	[2.30,3.19]	[4.95,7.09]	[3.96,6.23]	[6.14,10.66]	[2.89,6.58]	[5.72,10.81]	[2.80,7.37]	[5.51,11.45]
Alcohol	Yes vs. No	2.60***	7.40***	2.17***	4.28***	NA	NA	5.57***	9.03***	2.87***	5.54***
consumption		[1.89,3.57]	[5.11,10.73]	[1.90,2.48]	[3.65,5.01]			[4.15,7.48]	[5.95,13.72]	[1.97,4.17]	[3.96,7.75]
Cannabis	Yes vs. No	3.72***	13.78***	3.15***	8.25***	6.39***	12.06***	8.37***	14.46***	8.62***	14.68***
use		[2.29,6.05]	[8.97,21.18]	[2.38,4.17]	[6.14,11.09]	[4.04,10.12]	[8.13,17.90]	[5.32,13.19]	[8.84,23.66]	[5.25,14.17]	[9.18,23.48]
Amphetamine	Yes vs. No	3.95***	15.60***	5.26***	13.19***	5.58***	9.63***	9.00***	14.06***	12.34***	17.87***
use		[2.17,7.17]	[10.80,22.52]	[3.71,7.44]	[9.07,19.18]	[3.68,8.46]	[6.65,13.94]	[5.46,14.83]	[9.03,21.90]	[8.30,18.34]	[12.02,26.58]
Fast-food	Yes vs. No	1.57***	2.56***	1.25***	1.05	1.18	1.47**	1.28*	1.24	1.64***	1.79***
consumption		[1.23,1.99]	[1.94,3.38]	[1.13,1.40]	[0.93,1.19]	[0.96,1.45]	[1.14,1.89]	[1.00,1.64]	[0.93,1.67]	[1.29,2.10]	[1.34,2.41]
Soft-drink	Yes vs. No	1.18	1.27	0.89	1.11	0.99	1.11	1.27	1.25	1.01	1.00
consumption		[0.89,1.56]	[0.94,1.73]	[0.74,1.07]	[0.91,1.34]	[0.82,1.20]	[0.79,1.57]	[0.96,1.68]	[0.93,1.67]	[0.64,1.58]	[0.71,1.41]
Low physical	Yes vs. No	1.64**	1.45*	0.96	0.74**	0.76*	1.14	1.58**	2.73***	1.23	0.82
activity		[1.17,2.31]	[1.02,2.07]	[0.81,1.13]	[0.61,0.91]	[0.60,0.97]	[0.84,1.55]	[1.13,2.20]	[1.90,3.93]	[0.80,1.90]	[0.59,1.13]
Sedentary	Yes vs. No	1.15	1.64**	1.22**	1.85***	1.46***	2.71***	1.38**	2.20***	1.09	1.52**
behavior		[0.90,1.48]	[1.21,2.23]	[1.08,1.38]	[1.62,2.10]	[1.22,1.76]	[2.15,3.42]	[1.09,1.74]	[1.63,2.99]	[0.86,1.37]	[1.15,2.02]
Sexual	Yes vs. No	2.09***	2.90***	1.94***	3.61***	NA	NA	2.60***	4.14***	3.34***	5.15***

intercourse		[1.58,2.76]	[2.16,3.89]	[1.71,2.21]	[2.97,4.39]			[1.80,3.74]	[2.75,6.25]	[2.59,4.31]	[3.79,7.00]
Sleep problems	Yes vs. No	2.58*** [1.82,3.66]	4.14*** [2.94,5.84]	3.16*** [2.60,3.86]	6.46*** [5.47,7.61]	2.54*** [1.98,3.26]	4.26*** [3.25,5.59]	3.76*** [2.81,5.02]	8.09*** [5.90,11.11]	1.60* [1.05,2.43]	2.90*** [1.86,4.51]
Loneliness	Yes vs. No	2.00*** [1.56,2.57]	3.51*** [2.56,4.80]	3.37*** [2.89,3.92]	6.50*** [5.61,7.53]	2.47*** [2.05,2.98]	3.77*** [2.99,4.77]	2.91*** [2.23,3.79]	4.56*** [3.54,5.89]	2.24*** [1.56,3.21]	3.53*** [2.20,5.68]
Close friends	None vs. ≥1	2.19*** [1.59,3.03]	2.58*** [1.87,3.57]	1.70*** [1.37,2.12]	3.32*** [2.67,4.13]	2.34*** [1.77,3.08]	3.96*** [2.89,5.43]	3.71*** [2.54,5.41]	7.19*** [5.24,9.88]	4.81*** [3.03,7.62]	4.80*** [3.11,7.41]
Low parental support	Yes vs. No	1.45** [1.14,1.84]	1.04 [0.66,1.65]	1.66*** [1.42,1.93]	2.52*** [2.15,2.95]	1.25* [1.01,1.56]	1.07 [0.76,1.50]	2.59*** [1.95,3.44]	1.73*** [1.26,2.37]	1.66*** [1.35,2.04]	1.49* [1.06,2.09]
Bullying victimization	Yes vs. No	2.55*** [2.01,3.23]	4.32*** [3.04,6.13]	2.42*** [2.15,2.73]	3.63*** [3.14,4.20]	2.56*** [2.13,3.07]	4.43*** [3.40,5.77]	3.17*** [2.51,4.01]	4.36*** [3.34,5.69]	3.06*** [2.32,4.04]	3.71*** [2.72,5.06]

Abbreviations: AFR African Region; AMR Region of the Americas; EMR Eastern Mediterranean Region; SEAR South-East Asia Region; WPR Western Pacific Region; SSA Single suicide attempt; SA Suicide attempt; MSA Multiple suicide attempts

Data are odds ratio [95% confidence interval]

Models were adjusted for age, sex, food insecurity, and country.

[a] Estimates are based on a model mutually adjusted for age, sex, food insecurity, and country.

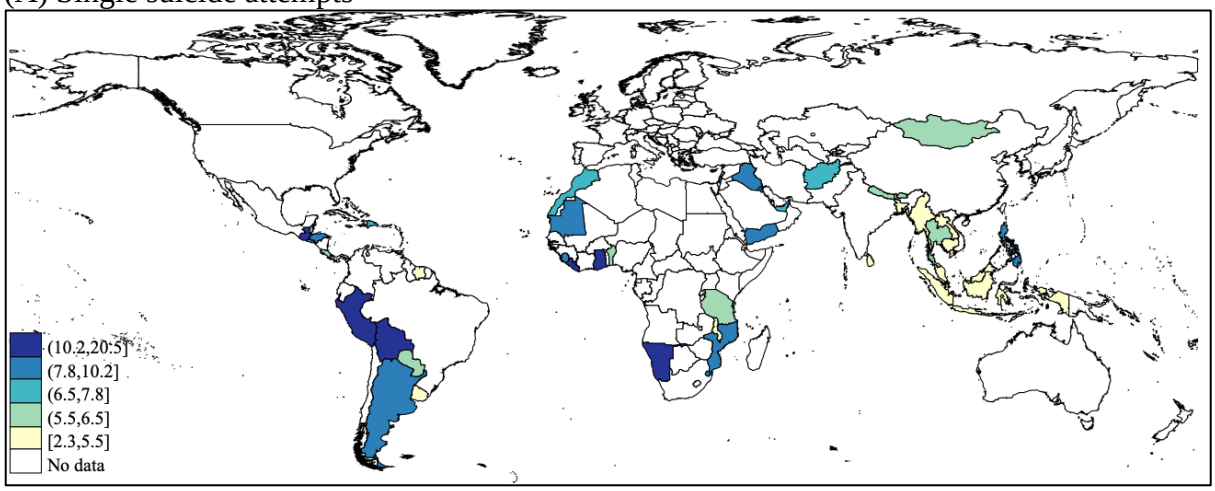
* p<0.05, ** p<0.01, *** p<0.001

Table 4 Correlates of multiple suicide attempts (outcome) among those who attempted suicide estimated by multivariable binary logistic regression

Characteristic	Categories	**Overall**		**AFR**		**AMR**		**EMR**		**SEAR**		**WPR**	
Age (years)[a]	12	1.00		1.00		1.00		1.00		1.00		1.00	
	13	1.03	[0.81,1.29]	0.78	[0.43,1.42]	1.04	[0.70,1.55]	0.71	[0.40,1.24]	1.08	[0.72,1.63]	2.33**	[1.35,4.01]
	14	0.89	[0.68,1.15]	0.46**	[0.26,0.82]	1.09	[0.72,1.64]	0.67	[0.38,1.19]	0.87	[0.54,1.42]	2.26**	[1.23,4.17]
	15	0.80	[0.62,1.02]	0.48*	[0.26,0.88]	0.93	[0.63,1.36]	0.55	[0.31,1.00]	0.94	[0.60,1.49]	1.68	[0.97,2.91]
Sex[a]	Boys vs. Girls	0.88	[0.78,1.00]	1.00	[0.77,1.31]	0.72***	[0.60,0.87]	0.90	[0.70,1.17]	0.87	[0.65,1.15]	0.94	[0.71,1.25]
Food insecurity[a]	Never	1.00		1.00		1.00		1.00		1.00		1.00	
	Moderate	1.18*	[1.03,1.35]	1.56***	[1.23,1.98]	1.28**	[1.07,1.54]	0.95	[0.66,1.35]	1.19	[0.87,1.63]	0.98	[0.73,1.31]
	Severe	1.41**	[1.14,1.74]	1.87**	[1.27,2.75]	1.82**	[1.27,2.62]	1.73**	[1.18,2.53]	1.10	[0.67,1.81]	1.01	[0.57,1.79]
Smoking	Yes vs. No	1.82***	[1.57,2.12]	2.30***	[1.69,3.12]	2.18***	[1.76,2.69]	1.61**	[1.13,2.29]	1.68**	[1.20,2.35]	1.72***	[1.27,2.34]
Alcohol consumption	Yes vs. No	1.96***	[1.68,2.28]	2.50***	[1.81,3.47]	1.90***	[1.58,2.29]			1.84**	[1.26,2.68]	1.92***	[1.44,2.55]
Cannabis use	Yes vs. No	2.07***	[1.63,2.62]	3.91***	[2.28,6.71]	2.69***	[1.95,3.71]	2.03**	[1.29,3.19]	1.82*	[1.11,2.99]	1.66*	[1.11,2.48]
Amphetamine use	Yes vs. No	1.88***	[1.50,2.35]	4.10***	[1.93,8.71]	2.71***	[1.83,4.04]	1.80*	[1.14,2.85]	1.63*	[1.09,2.45]	1.42*	[1.02,1.98]
Fast-food consumption	Yes vs. No	1.10	[0.96,1.26]	1.57**	[1.12,2.21]	0.86	[0.73,1.01]	1.27	[0.94,1.71]	1.00	[0.74,1.36]	1.06	[0.79,1.43]
Soft-drink consumption	Yes vs. No	1.04	[0.88,1.24]	1.07	[0.72,1.59]	1.24	[0.99,1.55]	1.15	[0.82,1.62]	1.00	[0.69,1.44]	0.95	[0.67,1.36]
Low physical activity	Yes vs. No	1.11	[0.93,1.32]	0.89	[0.58,1.37]	0.78	[0.61,1.00]	1.55*	[1.05,2.27]	1.81**	[1.22,2.69]	0.68	[0.43,1.05]
Sedentary behavior	Yes vs. No	1.53***	[1.32,1.76]	1.40	[0.95,2.06]	1.49***	[1.27,1.74]	1.75***	[1.32,2.33]	1.65**	[1.18,2.30]	1.40*	[1.04,1.90]
Sexual intercourse	Yes vs. No	1.60***	[1.34,1.92]	1.41*	[1.00,1.98]	1.88***	[1.53,2.31]			1.58*	[1.07,2.35]	1.55**	[1.12,2.13]
Sleep problems	Yes vs. No	1.89***	[1.56,2.29]	1.67*	[1.03,2.69]	2.04***	[1.62,2.56]	1.68**	[1.21,2.31]	2.17***	[1.41,3.36]	1.74*	[1.09,2.76]
Loneliness	Yes vs. No	1.64***	[1.39,1.94]	1.76**	[1.16,2.65]	2.00***	[1.64,2.42]	1.59**	[1.20,2.11]	1.54*	[1.07,2.22]	1.58*	[1.08,2.30]
Close friends	None vs. ≥1	1.49**	[1.17,1.90]	1.31	[0.87,1.96]	1.95***	[1.45,2.62]	1.68**	[1.16,2.42]	1.76*	[1.12,2.78]	1.02	[0.53,1.96]
Low parental support	Yes vs. No	0.91	[0.76,1.10]	0.76	[0.49,1.19]	1.54***	[1.24,1.91]	0.92	[0.64,1.32]	0.73	[0.50,1.07]	0.90	[0.58,1.38]
Bullying victimization	Yes vs. No	1.42***	[1.23,1.64]	1.74**	[1.21,2.49]	1.51***	[1.28,1.79]	1.68**	[1.23,2.30]	1.33	[0.95,1.84]	1.18	[0.89,1.56]

Abbreviations: AFR African Region; AMR Region of the Americas; EMR Eastern Mediterranean Region; SEAR South-East Asia Region; WPR Western Pacific Region
Data are odds ratio [95% confidence interval]
Models were adjusted for age, sex, food insecurity, and country.
The reference category of the outcome was single suicide attempt.
[a] Estimates are based on a model mutually adjusted for age, sex, food insecurity, and country.
* p<0.05, ** p<0.01, *** p<0.001

(A) Single suicide attempts



(B) Multiple suicide attempts

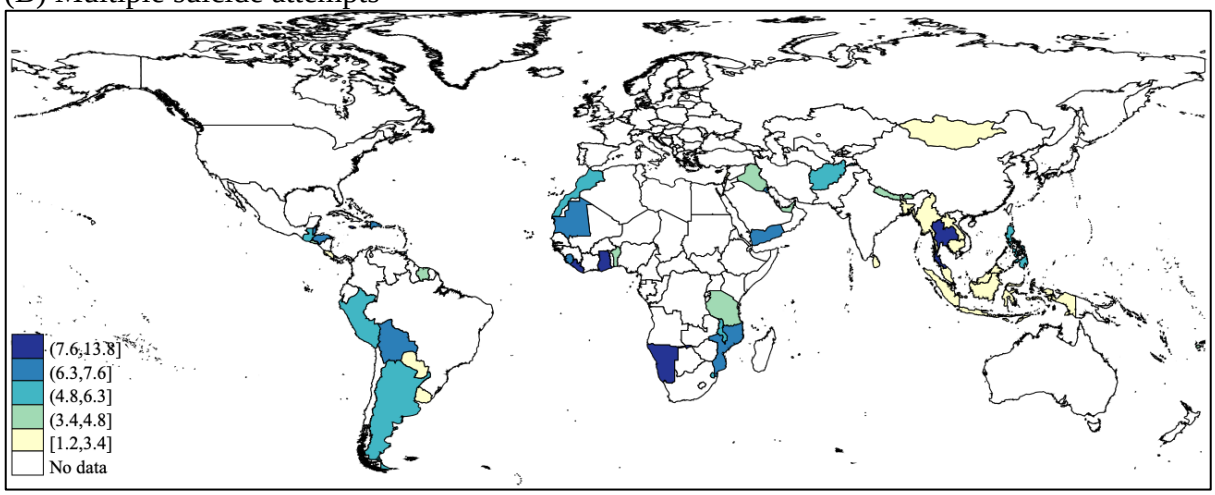


Figure 1 Age- and sex-adjusted prevalence of (A) single and (B) multiple suicide attempts

Appendix

Table S1 Availability of data on correlates by country

Region	Country	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
AFR	Benin											
	Ghana											
	Liberia											
	Malawi				N/A	N/A	N/A	N/A	N/A	N/A		N/A
	Mauritania			N/A								
	Mauritius											
	Mozambique											
	Namibia											
	Seychelles											
	Sierra Leone	N/A	N/A				N/A	N/A				
	Swaziland		N/A	N/A					N/A	N/A		
	Tanzania											
AMR	Antigua & Barbuda				N/A	N/A						
	Argentina											
	Bahamas											
	Belize		N/A									
	Bolivia											
	Costa Rica				N/A	N/A						
	Curacao					N/A						
	Dominica		N/A		N/A	N/A				N/A		N/A
	Dominican Republic											
	El Salvador		N/A		N/A	N/A						
	Guatemala		N/A									N/A
	Honduras				N/A	N/A						
	Jamaica											
	Paraguay		N/A		N/A	N/A						
	Peru											
	St. Kitts & Nevis		N/A	N/A	N/A	N/A						
	Suriname											
	Trinidad & Tobago											
	Uruguay				N/A	N/A						
EMR	Afghanistan			N/A							N/A	
	Iraq			N/A							N/A	
	Kuwait			N/A	N/A	N/A					N/A	
	Lebanon										N/A	
	Morocco			N/A							N/A	
	United Arab Emirates			N/A	N/A	N/A					N/A	
	Yemen			N/A	N/A	N/A					N/A	
SEAR	Bangladesh											
	Bhutan	N/A				N/A	N/A					
	East Timor											
	Indonesia											
	Maldives			N/A					N/A	N/A	N/A	
	Myanmar		N/A		N/A	N/A	N/A				N/A	
	Nepal											
	Sri Lanka					N/A					N/A	
	Thailand											
WPR	Brunei Darussalam											
	Cambodia											N/A
	Fiji											
	French Polynesia											
	Kiribati											
	Laos											
	Malaysia											
	Mongolia											

	Philippines										N/A	
	Samoa											
	Solomon Islands										N/A	
	Tonga										N/A	
	Tuvalu											
	Vanuatu											

Abbreviations: AFR African Region; AMR Region of the Americas; EMR Eastern Mediterranean Region; SEAR South-East Asia Region; WPR Western Pacific Region

Data on age, sex, anxiety-induced sleep problems, loneliness, bullying victimization, and close friends were available from all countries.

(a) Food insecurity
(b) Smoking
(c) Alcohol consumption
(d) Cannabis use
(e) Amphetamine use
(f) Fast-food consumption
(g) Soft-drink consumption
(h) Low physical activity
(i) Sedentary behavior
(j) Sexual intercourse
(k) Parental support

Table S2 Prevalence of correlates (overall and by region)

Characteristic	Category	**Total**	**AFR**	**AMR**	**EMR**	**SEAR**	**WPR**
Age (years)	12	11.7	13.1	5.8	12.1	14.4	7.1
	13	27.8	25.5	25.1	27.0	29.3	27.3
	14	32.9	30.5	35.2	30.4	33.5	32.9
	15	27.5	30.9	33.9	30.5	22.8	32.8
Sex	Boys	50.8	48.7	48.9	52.8	52.1	48.4
Food insecurity	Never	49.9	59.3	59.9	61.3	48.8	34.4
	Moderate	43.3	30.4	36.4	29.4	45.1	59.0
	Severe	6.7	10.4	3.7	9.3	6.1	6.6
Smoking	Yes	11.5	9.0	16.4	12.9	10.6	12.4
Cannabis use	Yes	2.9	3.4	4.3	3.3	2.0	4.1
Amphetamine use	Yes	2.8	4.1	2.2	4.0	2.1	3.7
Fast-food consumption	Yes	54.2	47.3	48.2	55.2	58.5	49.8
Soft-drink consumption	Yes	76.1	68.7	89.2	73.6	72.0	84.5
Low physical activity	Yes	84.0	82.5	84.8	87.0	81.1	90.8
Sedentary behavior	Yes	26.9	22.7	36.3	26.5	24.0	31.8
Sleep problems	Yes	7.2	9.4	7.7	13.4	4.7	8.7
Loneliness	Yes	10.0	10.4	9.8	16.0	7.7	12.8
Close friends	None	5.7	9.2	6.1	7.4	4.9	4.2
Low parental support	Yes	13.8	14.9	14.6	21.0	9.3	21.6
Bullying victimization	Yes	32.7	39.3	29.3	34.8	27.9	42.8

Abbreviations: AFR African Region; AMR Region of the Americas; EMR Eastern Mediterranean Region; SEAR South-East Asia Region; WPR Western Pacific Region
Data are %.