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HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN
LËTZEBUERG / LUXEMBOURG

Suicidal behaviour of school-aged children in Luxembourg

Report on the Luxembourg HBSC Survey 2022

HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN:
WORLD HEALTH ORGANIZATION COLLABORATIVE CROSS-NATIONAL STUDY (HBSC)

LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de l'Éducation nationale, de l'Enfance et de la Jeunesse

LE GOUVERNEMENT DU GRAND-DUCHÉ DE LUXEMBOURG
Ministère de la Santé et de la Sécurité sociale
Direction de la santé

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Sarah Bitar
Felipe G Mendes
Marta Vigier
Anna Ginsburg
Carolina Catunda

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Contributors

Authors

Dr Sarah Bitar	Postdoctoral researcher, University of Luxembourg
Dr Felipe G Mendes	Postdoctoral researcher, University of Luxembourg
Dr Marta Vigier	Postdoctoral researcher, University of Luxembourg
Anna Ginsburg, M.Sc.	Research and development specialist, University of Luxembourg
Dr Carolina Catunda	Research scientist, University of Luxembourg

HBSC Luxembourg Team

Dr Sarah Bitar	Postdoctoral researcher, University of Luxembourg
Dr Carolina Catunda	Co-Principal Investigator, University of Luxembourg
Dr Senad Karavdic	*Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques* (SCRIPT)
Joana Lopes Ferreira, M.Sc.	University of Luxembourg
Anna Ginsburg, M.Sc.	University of Luxembourg
Dr Felipe G Mendes	University of Luxembourg
Dr Marta Vigier	University of Luxembourg
Georges Metz, M.A.	Ministry of Education, Children and Youth
Dr Maud Moinard	Co-Principal Investigator, Ministry of Health and Social Security/Health Directorate
Dr Josepha Nell	Ministry of Education, Children and Youth
Dr Katharina K Pucher	Ministry of Health and Social Security/Health Directorate
Dr Caroline Residori	Research and development specialist, University of Luxembourg
Prof Dr Robin Samuel	University of Luxembourg
Aurélie Ventujol, M.Sc	*Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques* (SCRIPT)

Acknowledgement

The Health Behaviour in School-aged Children (HBSC) study was initiated in 1982 and has been conducted every four years to understand and promote the health and well-being of children and adolescents. Currently, more than 50 countries participate in the international study, Luxembourg being one of them since 2006. By comparing data over many years and across countries, policy makers, teachers, students, parents, as well as anyone interested in the health of the growing generation can make informed decisions.

This report on the HBSC 2022 survey was only possible because many people contributed to data collection and processing. We would like to take this opportunity to thank them.

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For the HBSC Luxembourg team:
Dr Carolina Catunda and Dr Maud Moinard (Co-Principal Investigators)

Summary

About this report

The present report documents the results on suicidal behaviour among adolescents aged 13 to 18 participating in the HBSC Luxembourg surveys conducted between 2006 and 2022. Across these four survey waves (2006, 2010, 2014, and 2022), a total of 24 528 pupils provided data, allowing for the analysis of trends and inequalities in four indicators: sadness, suicidal ideation, suicide planning, and suicide attempts. The report also examines behavioural and social factors associated with suicidality, including health lifestyles, gender identity, and peer relationships.

Trends and social inequalities (2006–2022)

Since 2006, the prevalence of sadness and suicidality among adolescents in Luxembourg has risen sharply, particularly between 2014 and 2022. In 2022, 37.7% of adolescents reported prolonged sadness, 23.3% suicidal ideation, 20.9% a suicide plan, and 11.7% reported at least one suicide attempt in the past year, nearly doubling since 2010.

Clear gender disparities persist. In 2022, girls were almost twice more likely to report sadness and suicidal behaviours as boys across all survey years, reflecting a widening gender gap consistent with international trends. Age patterns showed that while sadness increased progressively, suicidal planning and attempts were more frequent in early adolescence. Nationality differences were modest but consistent, with non-Luxembourgish adolescents reporting slightly higher levels of suicide planning and attempts. Socioeconomic inequalities were pronounced: adolescents who perceived their families as not well off reported the highest levels of suicidality (e.g., 22.7% had attempted suicide in 2022), while those from well-off families reported the lowest. Finally, educational track differences persisted: adolescents in general secondary education (ESG) consistently reported higher levels of sadness and suicidality than those in classical secondary education (ESC). The difference was most pronounced for suicide attempts (14.0% in ESG vs. 8.6% in ESC), but similar patterns were observed for the other indicators.

Adolescent health lifestyles and suicidality

To move beyond single risk factors, the report identified five adolescent health lifestyle classes combining diet, physical activity, substance use, and problematic social media use. Class 1 (23.4%), characterized by high diet quality and physical activity with low substance use, showed the lowest levels of suicidal ideation and attempts. Class 2 (15.3%), marked by multiple substance use and poor diet, had more than twice the odds of suicidal ideation and almost three times the odds of suicide attempts compared with Class 1. Class 3 (5.2%), combining high vaping and problematic social media use, also showed threefold higher odds of ideation and over double the odds of attempts. Class 4 (12.2%), defined by high alcohol use and moderate physical activity, was associated with increased odds of suicidal ideation but not of attempts. Finally, Class 5 (43.9%), characterized by low diet quality and physical inactivity but no substance use, showed no elevated risk of suicidal ideation or attempts.

Gender identity, peer context, and suicidality

In 2022, about 3.5% of adolescents were identified as gender minorities, and this group exhibited the highest vulnerability. More than six in ten gender minority adolescents reported suicidal ideation (64.2%) and four in ten had attempted suicide (42.2%) in the past year, six times higher odds than their cisgender peers, even after adjustment for sociodemographic factors.

Bullying strongly increased the likelihood of suicidality across all adolescents (4.4-fold higher odds of attempts), but its impact did not differ significantly by gender. Peer support emerged as a protective factor overall (halving the odds of ideation and attempts), yet its effect was weaker for gender minority youth.

Conclusions and perspectives

Taken together, these results underline that suicide prevention requires coordinated, multi-level action. Strategies should address social and educational disparities, promote healthy and balanced lifestyles, and foster inclusive and supportive environments across schools, families, and community settings. Embedding suicide prevention within these broader equity and health promotion initiatives can help ensure that all adolescents, particularly those facing social disadvantage or identity-based stress, have access to timely, relevant, and affirming support.

Suicidal behaviour

Suicidal behaviour

Adolescence is a formative life stage characterized by profound psychological, emotional, and social transitions. During this period, individuals develop a sense of identity, increase their autonomy, and begin to establish long-term mental health trajectories (National Academies of Sciences et al., 2019). While this stage offers opportunities for growth, it is also associated with heightened vulnerability to mental distress, including suicidal thoughts and behaviours (Mastorci et al., 2024). Suicide remains one of the leading causes of death among adolescents worldwide (World Health Organization, 2021), and attempts during this developmental period can have lasting consequences on emotional and social functioning into adulthood (Ligier et al., 2021).

A wide range of factors contributes to suicide risk in adolescence, including behavioural patterns that reflect broader health lifestyles. Behaviours such as substance use (Wu et al., 2004), poor diet (Shawon et al., 2023), physical inactivity (Michael et al., 2020) and problematic social media engagement (Sedgwick et al., 2019) are each independently linked to suicide risks among adolescents. These behaviours rarely occur in isolation; rather, they tend to cluster together in meaningful ways that reflect underlying social influences and lifestyle orientations. Identifying these patterns is essential for understanding the cumulative impact of co-occurring risk factors on mental health.

In parallel, social vulnerabilities play a critical role in shaping adolescents' mental health outcomes. Gender minority youth, for example, are consistently found to be at greater risk for suicidal risks (Surace et al., 2021), often as a result of exclusion, stigma, and peer victimisation (Russell & Fish, 2016; Tebbe & Budge, 2022). More broadly, peer relationships during adolescence can act as powerful sources of support (Roach, 2018) or, conversely, as environments of harm (Lynn Mulvey et al., 2017). The presence or absence of peer support, experiences of bullying, and broader relational dynamics (such as peer acceptance, social exclusion, or interpersonal conflicts) all contribute significantly to adolescents' psychological resilience or vulnerability.

This report draws on nationally representative data from the HBSC survey to examine the landscape of adolescent suicide in Luxembourg. A total of 24 528 pupils aged 13 to 18 [n(2006)=6 352; n(2010)=6 894; n(2014)=5 095; n(2022)=6 187] enrolled in public and private secondary schools following the Luxembourg national curriculum, as well as international schools (2022 only), responded to an anonymised paper-pencil questionnaire in class, during school hours (Catunda et al., 2023). Data from 2018 were not included in this report, as suicide-related questions were not part of the questionnaire that year.

Previous reports have examined topics such as mental health, health behaviours, risk behaviours, the social context, the perceived impact of the COVID-19 pandemic and trends between 2006–2022. The present report complements this series exploring the HBSC Luxembourg 2022 survey. It focuses specifically on suicidal behaviour, presenting findings in three parts: (1) national trends and social inequalities from 2006 to 2022; (2) behavioural risk groups identified through lifestyle clustering; and (3) the intersection of gender identity, peer relationships, and suicidality. Together, these sections aim to inform prevention strategies, highlight vulnerable subgroups, and support policies that foster resilience among all adolescents.

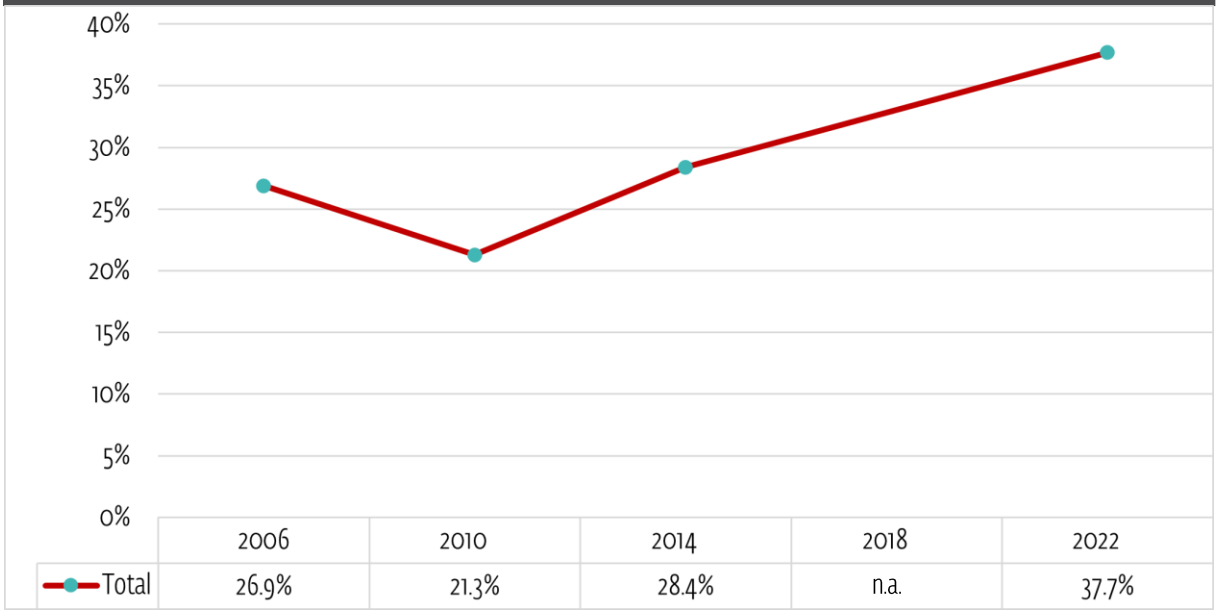
Trends from 2006 to 2022

The HBSC survey includes a set of questions designed to assess various stages of suicidal behaviour. These stages represent a progression commonly observed in research on suicidal behaviours (Klonsky et al., 2016), as follows: sadness, suicidal ideation, planning suicide, and suicide attempt.

Persistent feelings of **sadness** are often early indicators of emotional struggles that may lead to suicidal ideation, consistent with findings that sadness is a core component of depression (Mouchet-Mages & Baylé, 2008) and that suicidal ideation is highly prevalent among individuals with depressive disorder (Dong et al., 2021). The HBSC survey captures this with the question: "During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?", with two response options: "yes" or "no". Figure 1 displays the prevalence of respondents who answered positively.

Between 2006 and 2022, the prevalence of sadness fluctuated but showed a marked rise in the most recent wave. It went from 26.9% in 2006, to 21.3% in 2010, then rose to 28.4% in 2014, and reached 37.7% in 2022, the highest level observed to date.

Figure 1: Prevalence of sadness over time (2006-2022)

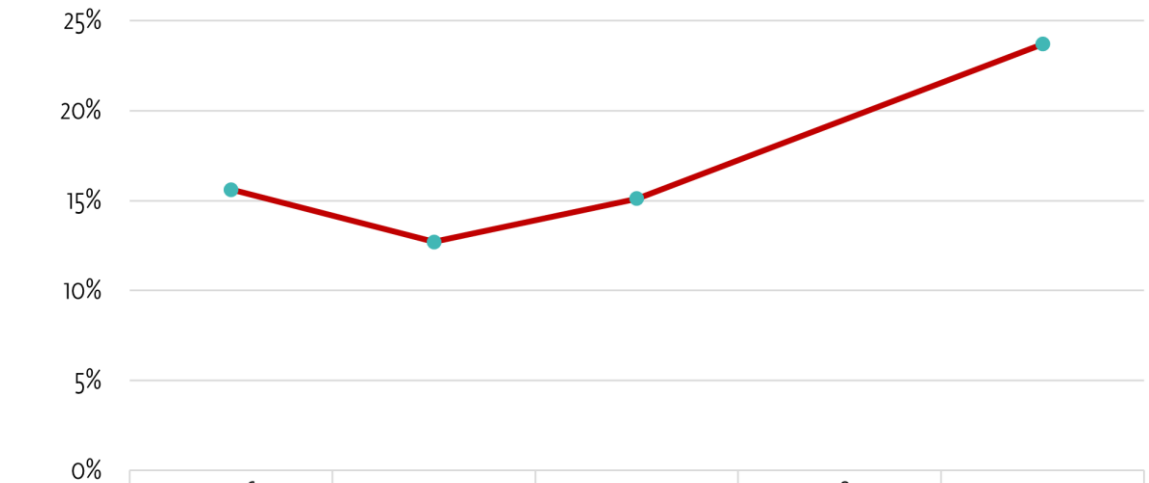


	2006	2010	2014	2018	2022
Total	26.9%	21.3%	28.4%	n.a.	37.7%

Suicidal ideation involves the contemplation of suicide as a potential course of action. It is addressed through: "During the past 12 months, did you ever seriously consider attempting suicide?", with two response options: "yes" or "no". Figure 2 presents the prevalence of adolescents who considered attempting suicide.

Suicidal ideation followed a similar pattern of decline and rebound. It fell from 15.6% in 2006 to 12.7% in 2010, returned to 15.1% in 2014, and increased sharply to 23.7% in 2022. This steady rise since 2014 points to worsening mental health. It is worth noting, however, that in 2022, the wording of this specific question was modified. Previous survey waves asked "Have you seriously considered attempting suicide?", the 2022 version asked "Have you thought about attempting suicide?". This subtle change in wording may have influenced how adolescents interpreted the question and could partly account for the higher prevalence observed in 2022. However, broader societal changes, including heightened emotional awareness and greater openness to expressing distress, may also have influenced adolescents' self-reporting.

Figure 2: Prevalence of suicide ideation over time (2006-2022)



	2006	2010	2014	2018	2022
Total	15.6%	12.7%	15.1%	n.a.	23.7%

Reflecting the transition from ideation to concrete intentions, **planning suicide** is captured by: "During the past 12 months, did you ever make a plan as to how you would attempt suicide?", with two response options: "yes" or "no". The prevalence of adolescents who planned suicide can be observed in Figure 3. Please note that the following trends only take into consideration the years 2010, 2014 and 2022. In 2006, students were asked to skip questions on suicide planning and attempt if they answered "no" the question related to ideation, making the comparison not possible.

Suicide planning shows a continuous upward trend. Prevalence increased from 11.2% in 2010 to 14.1% in 2014, and then to 20.9% in 2022, reflecting an increasing progression from suicidal thoughts toward concrete planning.

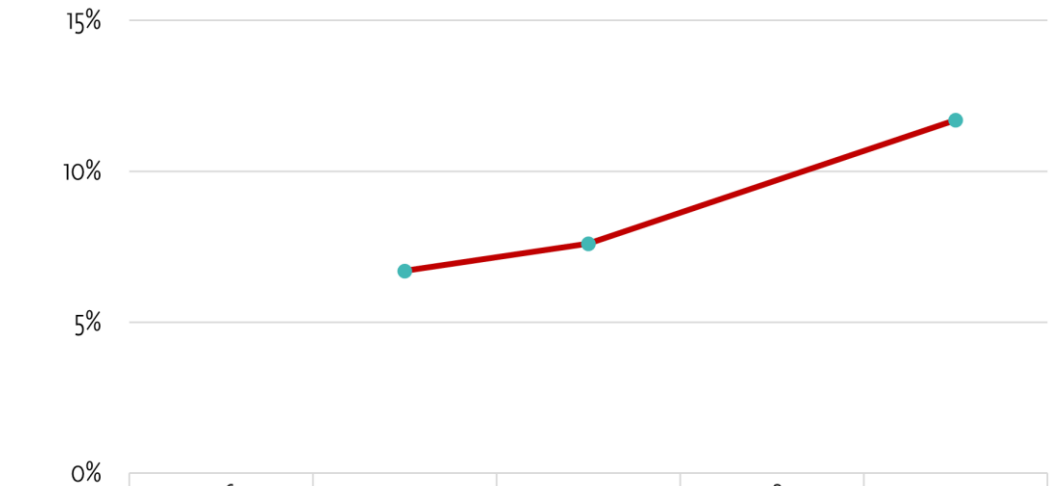
Finally, the following questions delve into **suicide attempt**: "During the past 12 months, how many times did you actually attempt suicide?". Response options ranged from "0" to "6 times or more" and were dichotomised as "yes" (one attempt or more) or "no" (zero attempts). Figure 4 represents the prevalence of suicide attempt over time (2010-2022).

Attempts also increased over time. From 6.7% in 2010, the rate edged up to 7.6% in 2014 before reaching 11.7% in 2022, nearly doubling since the first available data point. This highlights the importance of reinforcing social and clinical support during periods of suicidal ideation and planning, as evidence shows that social support interventions and collaborative care can significantly reduce the risk of escalation into suicide attempts (Inagaki et al., 2019; Yöyen & Keleş, 2024).

Figure 3: Prevalence of suicide planning over time (2006-2022)

	2006	2010	2014	2018	2022
Total	n.a.	11.2%	14.1%	n.a.	20.9%

Figure 4: Prevalence of suicide attempt over time (2006-2022)



	2006	2010	2014	2018	2022
Total	n.a.	6.7%	7.6%	n.a.	11.7%

In sum, the prevalences of the explored indicators (sadness, suicidal ideation, planning suicide, and suicide attempt) have increased at the population level across survey years. The results are concerning and consistent with broader evidence of declining adolescent mental health in Luxembourg, as documented in the "Mental health and well-being of school-aged children in Luxembourg" report (Catunda et al., 2023a). Comparable increases have also been documented in the neighbouring countries. For instance, the EnCLASS 2022 survey in France reported that 24% of high-school students experienced suicidal ideation and 13% reported at least one suicide attempt (EnCLASS, 2022). Globally, a meta-analysis estimated the prevalence of suicidal ideation at around 14% before the COVID-19 pandemic (Biswas et al., 2020), though subsequent studies suggest that the pandemic exacerbated emotional distress and suicidal behaviours in several countries, including France and Germany (Bruns et al., 2022; Cousien et al., 2021).

In Luxembourg, data from the Youth Survey Luxembourg (2019) and Youth and COVID-19 Survey (2021) among young people aged 16 to 29, did not show significant variation in suicide ideation, planning or attempts between 2019 and 2021 (Schomaker & Samuel, 2022). In contrast, the HBSC survey focuses on younger adolescents aged 13 to 18, and these age differences may partly explain why increasing trends were observed in HBSC but not in the Youth Survey. The significant rise in sadness reported in the Youth Survey nonetheless suggests that the psychological consequences of the pandemic may not have been fully evident at that time but could manifest later as enduring emotional difficulties.

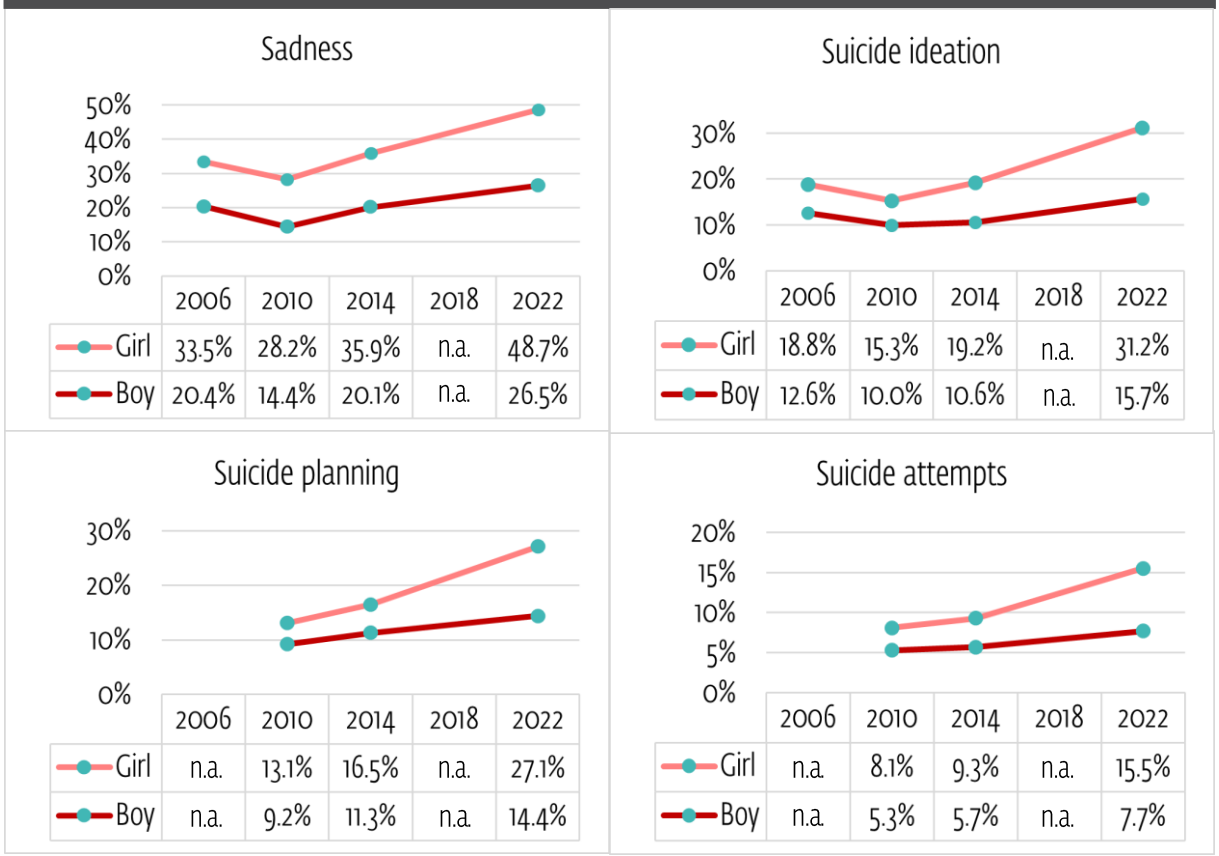
Trends in suicidal mortality diverge from the self-reported indicators examined in this report (sadness, suicidal ideation, suicide planning, and suicide attempt). In Europe, suicide deaths among adolescents have declined: rates among 15–19-year-olds fell from 13.1 per 100,000 in the 1990s to 10.9 in the 2000s among males, and from 3.9 to 3.3 among females (Bertuccio et al., 2024; Glenn et al., 2020). In Luxembourg, there has been an increase in indicators of sadness, ideation, planning, and suicide attempts among adolescents, but without a corresponding increase in suicide deaths. In fact, in the period from 2006 to 2022, a total of 30 deaths were registered as suicides in the age group 15 to 19 years old, which represents approximately 22% of all deaths registered for this age group (*Registre de causes de décès : mortalité générale*, 2024). Although there are considerable annual variations, the national mortality data suggest a globally stable prevalence of suicide prevalence over time (*Registre de causes de décès : mortalité générale*, 2024). One hypothesis for this discrepancy between rising self-reported suicidal indicators and stable mortality, is that these figures reflect an increased awareness of the issue, and consequently, a greater willingness among young people to report suffering and seek help. Evidence from other contexts suggests that attitudes towards seeking support and levels of stigma may influence the early identification and appropriate referral of individuals, thereby helping to prevent progression to completed suicide (Calear et al., 2014; Grosselli et al., 2024; Reynders et al., 2014).

Social inequalities in suicidal behaviours

Gender differences

Since 2006, girls in Luxembourg have consistently reported higher levels of sadness and suicidal ideation than boys. The gender gap was already visible in 2006 (e.g. sadness: 33.5% of girls vs. 20.4% of boys; suicidal ideation: 18.8% vs. 12.6%; Figure 5 and persisted through 2010 and 2014). Comparable data on suicide planning and attempts became available in 2010, and from the outset girls reported higher rates than boys. By 2022, these disparities had widened to their highest levels across all outcomes: nearly half of girls (48.7%) versus one-quarter of boys (26.5%) reported prolonged sadness; suicidal ideation was reported by 31.2% of girls compared with 15.7% of boys; suicide planning by 27.1% vs. 14.4%; and suicide attempts by 15.5% vs. 7.7%. Gender inequalities in adolescent mental health have thus been a consistent feature in Luxembourg since 2006, with the most recent results highlighting a further widening across the continuum from sadness to suicidal behaviour (Catunda et al., 2023a; Residori et al., 2024).

Figure 5: Prevalence of suicidal behaviour over time (2006-2022) by gender



Sadness	2006	2010	2014	2018	2022
Girl	33.5%	28.2%	35.9%	n.a.	48.7%
Boy	20.4%	14.4%	20.1%	n.a.	26.5%

Suicide ideation	2006	2010	2014	2018	2022
Girl	18.8%	15.3%	19.2%	n.a.	31.2%
Boy	12.6%	10.0%	10.6%	n.a.	15.7%

Suicide planning	2006	2010	2014	2018	2022
Girl	n.a.	13.1%	16.5%	n.a.	27.1%
Boy	n.a.	9.2%	11.3%	n.a.	14.4%

Suicide attempts	2006	2010	2014	2018	2022
Girl	n.a.	8.1%	9.3%	n.a.	15.5%
Boy	n.a.	5.3%	5.7%	n.a.	7.7%

Similar gender patterns are reported in neighbouring countries. In France, the EnCLASS 2022 survey (EnCLASS, 2022) found that nearly one in three adolescent girls reported suicidal thoughts in the past year compared with fewer than one in five boys, and lifetime suicide attempts were almost twice as common among girls. These national findings reflect a wider international trend (EnCLASS, 2022). A systematic review of longitudinal studies concluded that adolescent girls are more likely than boys to report suicidal ideation and attempts, while boys continue to have higher suicide mortality, a phenomenon often described as the "gender paradox" (Canetto & Sakinofsky, 1998; Miranda-Mendizabal et al., 2019). Taken together, these results suggest that Luxembourg's widening gender gap is part of a broader European and global pattern of heightened female vulnerability to suicidality.

Several social and environmental stressors may contribute to this widening gap, particularly in recent years. One key factor is school pressure: across Europe, adolescents report increasing stress from schoolwork, with a sharper rise among girls. Among 15-year-olds in the HBSC network, the share of girls reporting high schoolwork pressure rose from 54% in 2018 to 63% in 2022, compared with a smaller increase among boys (40% to 43%; WHO/Europe report, 2024). Such stress, combined with lower levels of family and teacher support typically reported by girls (Lopes Ferreira et al., 2023), may intensify emotional distress and suicidality.

Digital vulnerability may also play a role: girls' more intensive use of social media and smartphones exposes them more often to cyberbullying, social comparison, and disrupted sleep, which have been linked to higher risks of depression and suicidal behaviours (Biernesser et al., 2020).

Biological and developmental processes further contribute to gender differences. Puberty represents a critical period during which hormonal fluctuations can affect mood and behaviour, increasing the risk of suicidal ideation and behaviours in adolescents. Sex hormones such as oestrogen and progesterone influence neurotransmitter systems and brain regions involved in emotion regulation, which may partly explain the heightened vulnerability among adolescent girls (Ho et al., 2022). Hormonal changes associated with the menstrual cycle may further contribute to fluctuations in suicidal thoughts among adolescent girls (Owens et al., 2020).

Finally, socialisation patterns and gender norms may explain part of the disparity. Adolescent boys and young men often under-report suicidal ideation in survey research, as traditional masculine norms emphasize emotional control and discourage the expression of psychological distress. This dynamic contributes to the well-documented "gender paradox," whereby girls report more suicidal thoughts and attempts, while boys face higher suicide mortality (Bridge et al., 2006; Griffin et al., 2022). Adherence to masculine norms such as self-reliance and emotional restraint has been found to predict suicidal ideation and attempts, largely through reduced help-seeking and invulnerability (King et al., 2020; Pirkis et al., 2017). These findings align with evidence that male depression and suicidality are often underdiagnosed and undertreated, not because of lower prevalence, but because many boys and men experience and express distress in ways that remain unreported in surveys and unrecognized in clinical settings (Cleary, 2012).

Age differences

The relationship between age and suicidality varies by outcome. For sadness, prevalence rises gradually with age; in 2022, 34.3% of 13–14-year-olds reported prolonged sadness compared with 39.6% of 17–18-year-olds. Suicidal ideation showed a clearer age gradient in earlier waves (2006, 2010, 2014), with younger adolescents consistently reporting higher prevalence than older peer. By 2022, however, this gradient had flattened, with similarly high levels

across all age groups (23.3% at 13–14, 25.0% at 15–16, and 22.3% at 17–18). A more consistent gradient was observed for suicide planning and attempts, which were most frequent among younger adolescents in every wave. In 2022, planning was reported by 22.1% of 13–14-year-olds compared with 18.6% of 17–18-year-olds, and attempts by 12.8% vs. 9.9%, respectively. These findings suggest that while sadness tends to increase gradually with age, suicidal behaviours are concentrated in early-to-mid adolescence, though ideation became more evenly distributed across age groups in 2022.

Figure 6: Prevalence of suicide behaviour over time (2006-2022) by age

Sadness	2006	2010	2014	2018	2022
13-14	22.5%	20.1%	26.3%	n.a.	34.3%
15-16	29.0%	22.5%	30.1%	n.a.	39.5%
17-18	28.5%	21.3%	28.5%	n.a.	39.6%

Suicide ideation	2006	2010	2014	2018	2022
13-14	17.1%	14.4%	16.5%	n.a.	23.3%
15-16	17.7%	14.2%	16.0%	n.a.	25.0%
17-18	12.3%	9.8%	12.8%	n.a.	22.3%

Suicide planning	2006	2010	2014	2018	2022
13-14	n.a.	12.2%	13.8%	n.a.	22.1%
15-16	n.a.	12.3%	15.0%	n.a.	21.3%
17-18	n.a.	9.3%	13.5%	n.a.	18.6%

Suicide attempts	2006	2010	2014	2018	2022
13-14	n.a.	8.3%	8.7%	n.a.	12.8%
15-16	n.a.	7.5%	7.8%	n.a.	12.0%
17-18	n.a.	4.7%	6.3%	n.a.	9.9%

Comparable results are seen in France. The EnCLASS 2022 survey (EnCLASS, 2022) reported that both suicidal ideation and attempts were more frequent among younger high-school students and declined with age (e.g. suicidal ideation: 33.4% in grade 10 [≈15–16 years] vs. 27.3% in grade 12 [≈17–18 years]; lifetime attempts: 20.3% vs. 15.8%).

Taken together, these patterns indicate that suicide related indicators evolve differently across adolescence. Sadness appears to accumulate during the later teenage years, whereas suicide planning and attempts are more frequent in early adolescence and decline thereafter. Developmental factors may help explain these trends: younger adolescents often have less developed coping strategies and greater impulsivity, while older adolescents may benefit from improved self-regulation and broader support networks (Kasen et al., 2011).

From a neurodevelopmental perspective, early adolescence is marked by an imbalance between rapidly developing socioemotional systems and the slower maturation of prefrontal control regions (Casey et al., 2008). During early

adolescence, heightened limbic reactivity and underdeveloped executive control may increase impulsive reactions to distress, contributing to suicide planning and attempts. As prefrontal regions mature in later adolescence, regulatory capacity improves, reducing impulsive suicidal behaviour. At the same time, cumulative stress exposure and allostatic load may drive persistent dysphoria, explaining the rise in sadness (McEwen & Morrison, 2013).

Cognitive and contextual factors further refine this understanding. Early adolescents often respond to intense emotions with limited foresight, making suicidal behaviour more likely under acute distress. Older adolescents, by contrast, develop greater abstract reasoning and self-reflective capacity, which can foster rumination and sustained negative self-evaluation (Nolen-Hoeksema et al., 2008). These processes may consolidate chronic sadness even as behavioural impulsivity decreases.

With increasing age, many adolescents appear to gain resilience and broader support networks, which may help explain the decline in suicidal behaviours. However, when suicide attempts do occur later in adolescence, they are often described as more severe medically life-threatening, possibly due to greater planning and access to means (Jopling et al., 2022). The adolescent social context changes dramatically over time. Early adolescence is characterized by strong peer effects, heightened sensitivity to rejection, and major school transitions that can precipitate crises (Prinstein et al., 2001). Later adolescence brings increased autonomy, broader coping repertoires, and in many cases, intervention following earlier crises, all of which may reduce new attempts. However, accumulating academic pressure, identity struggles, and future uncertainty may deepen chronic sadness (Patton et al., 2016a).

Nationality differences

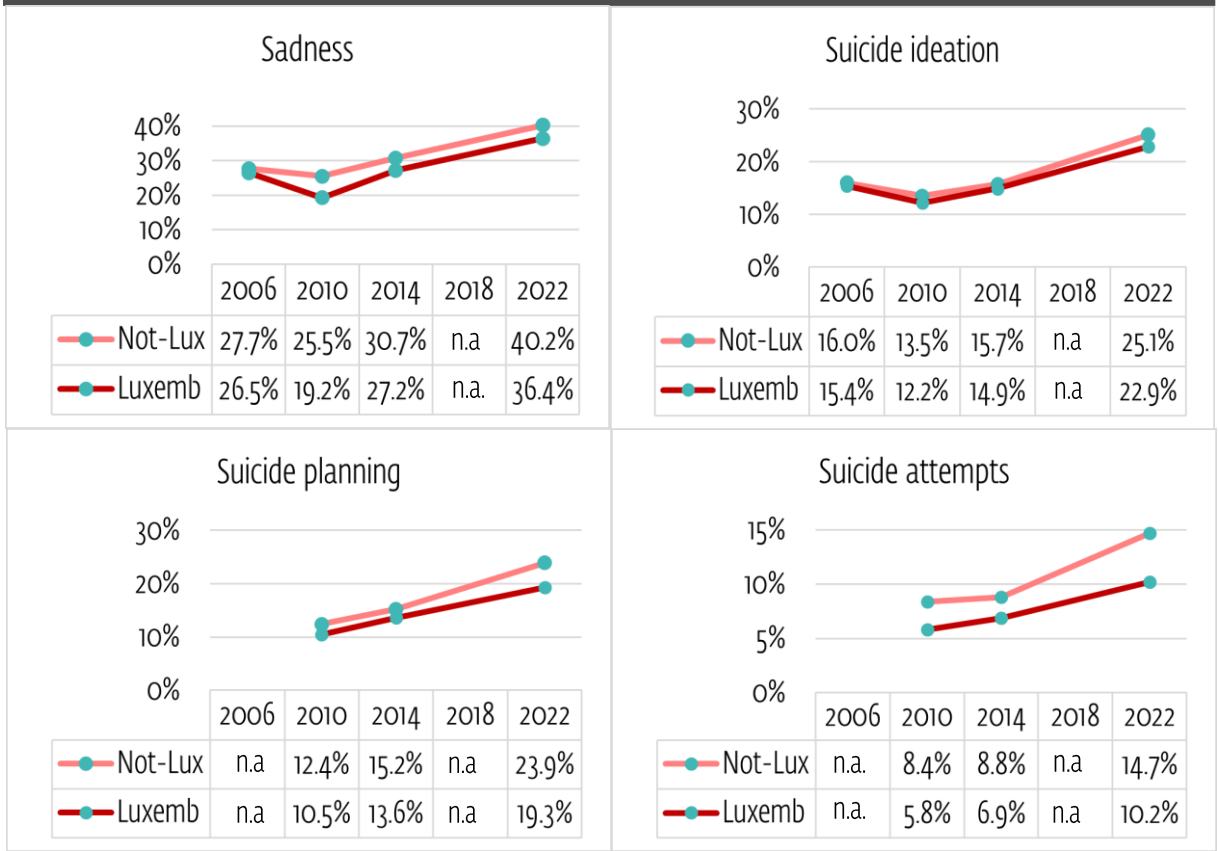
Differences by nationality are visible across all outcomes, though they are more pronounced for suicidal behaviours than for sadness. For sadness and suicidal ideation, Luxembourgish and non-Luxembourgish adolescents reported broadly similar levels across survey waves, with non-Luxembourgish youth consistently slightly higher (e.g. in 2022, 40.2% vs. 36.4% for sadness and 25.1% vs. 22.9% for ideation). Larger disparities were observed for suicide planning and suicide attempts, where non-Luxembourgish adolescents reported higher prevalence in every wave. In 2022, planning was reported by 23.9% of non-Luxembourgish adolescents compared with 19.3% of Luxembourgish and attempts by 14.7% versus 10.2%. These findings suggest that while emotional distress is widespread in both groups, non-Luxembourgish adolescents are somewhat more likely to report suicidal behaviours, particularly planning and attempts.

Comparable patterns have been observed in other European contexts. In Germany, a large representative study found that adolescents with a migration background reported significantly higher prevalence of suicidal ideation and attempts than their native-born peers, with especially pronounced differences among girls (Donath et al., 2019). A recent systematic review also concluded that young migrants are at elevated risk of self-harm and suicide attempts compared to non-migrant youth, while differences in suicidal ideation were less consistent across studies (Basu et al., 2022a).

These results highlight the influence of broader social determinants on suicide risk. Non-Luxembourgish adolescents may encounter additional challenges related to adaptation, cultural differences, or varying levels of family and institutional support (Delaruelle et al., 2021), which are factors often linked to higher rates of suicidal behaviours. Migration-related stressors, such as language barriers, experiences of discrimination, or uncertainty regarding

residence and parental employment, have also been shown to contribute to psychological vulnerability during adolescence (Basu et al., 2022b; Donath et al., 2019). In Luxembourg, these issues may be particularly salient given the country's multilingual and multicultural context. A large proportion of adolescents have a migration background and must navigate multiple languages and cultural expectations in their daily lives, which can create additional integration demands. At the same time, the relatively small differences in sadness and suicidal ideation between Luxembourgish and non-Luxembourgish adolescents suggest that emotional distress is a widespread concern across all groups. This underlines the importance of prevention and support strategies that are both universal and equity-oriented, ensuring that interventions are accessible and culturally sensitive while addressing the needs of all adolescents.

Figure 7: Prevalence of suicidal behaviour over time (2006-2022) by nationality



Sadness	2006	2010	2014	2018	2022
Not-Lux	27.7%	25.5%	30.7%	n.a	40.2%
Luxemb	26.5%	19.2%	27.2%	n.a.	36.4%

Suicide ideation	2006	2010	2014	2018	2022
Not-Lux	16.0%	13.5%	15.7%	n.a	25.1%
Luxemb	15.4%	12.2%	14.9%	n.a	22.9%

Suicide planning	2006	2010	2014	2018	2022
Not-Lux	n.a	12.4%	15.2%	n.a	23.9%
Luxemb	n.a	10.5%	13.6%	n.a	19.3%

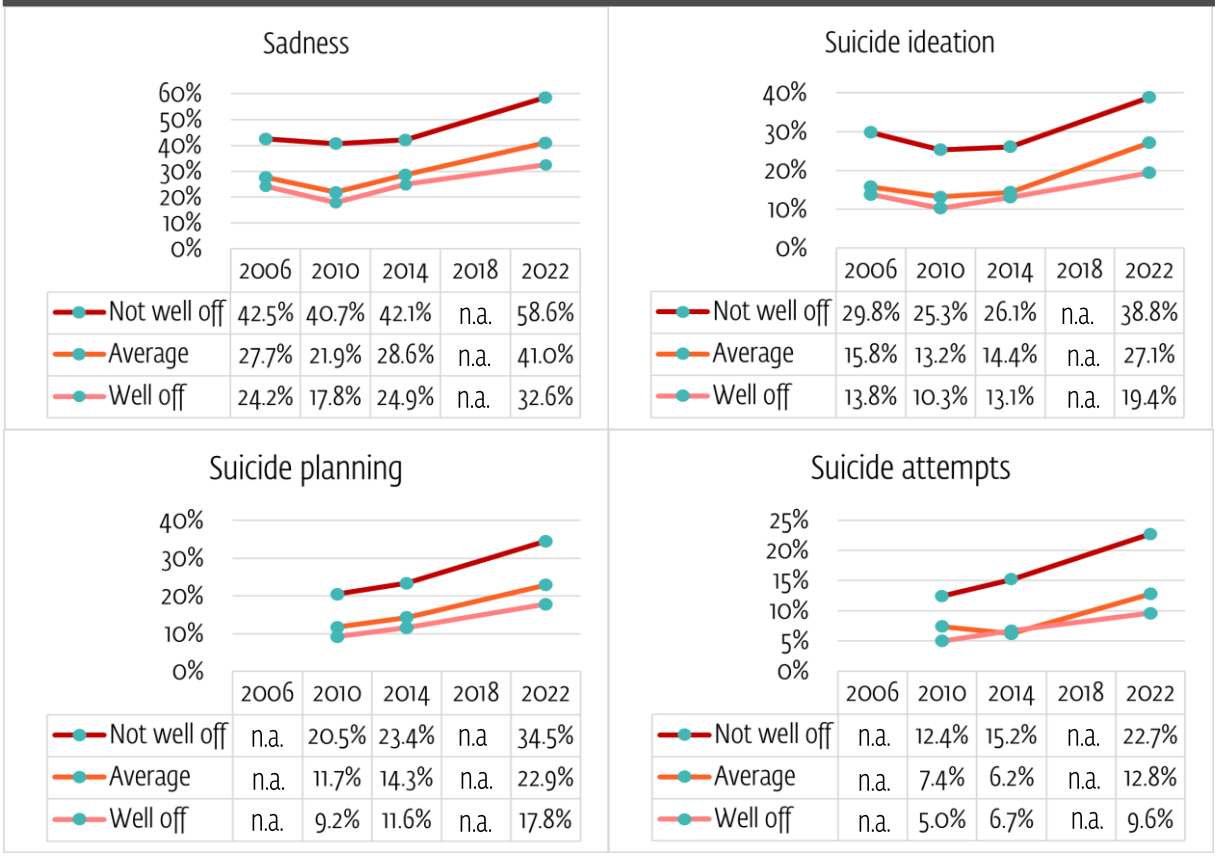
Suicide attempts	2006	2010	2014	2018	2022
Not-Lux	n.a.	8.4%	8.8%	n.a	14.7%
Luxemb	n.a.	5.8%	6.9%	n.a	10.2%

Socioeconomic differences

A clear socioeconomic divide is visible across all outcomes. Adolescents who perceived their families as not well off consistently reported the highest levels of sadness and suicidality, while those from well off families reported the lowest. However, a notable trend is the sharp rise among adolescents who rated their family situation as "average." In 2022, sadness affected 58.6% of the not well off group, compared with 41.0% in the average group (up from 22% in 2010) and 32.6% among the well off. Similar differences were observed for suicidal ideation (38.8% vs. 27.1% vs. 19.4%), suicide planning (34.5% vs. 22.9% vs. 17.8%), and suicide attempts (22.7% vs. 12.8% vs. 9.6%). These findings suggest that while the socioeconomic gradient remains clear, vulnerabilities are not confined to the most

disadvantaged: adolescents from "average" households have also experienced a steep increase in sadness and suicidality, narrowing the gap with their less well-off peers.

Figure 8: Prevalence of suicidal behaviour over time (2006-2022) by perceived family wealth



Sadness	2006	2010	2014	2018	2022
Not well off	42.5%	40.7%	42.1%	n.a.	58.6%
Average	27.7%	21.9%	28.6%	n.a.	41.0%
Well off	24.2%	17.8%	24.9%	n.a.	32.6%

Suicide ideation	2006	2010	2014	2018	2022
Not well off	29.8%	25.3%	26.1%	n.a.	38.8%
Average	15.8%	13.2%	14.4%	n.a.	27.1%
Well off	13.8%	10.3%	13.1%	n.a.	19.4%

Suicide planning	2006	2010	2014	2018	2022
Not well off	n.a.	20.5%	23.4%	n.a	34.5%
Average	n.a.	11.7%	14.3%	n.a.	22.9%
Well off	n.a.	9.2%	11.6%	n.a.	17.8%

Suicide attempts	2006	2010	2014	2018	2022
Not well off	n.a.	12.4%	15.2%	n.a.	22.7%
Average	n.a.	7.4%	6.2%	n.a.	12.8%
Well off	n.a.	5.0%	6.7%	n.a.	9.6%

These national findings mirror international research. Cross-national HBSC reports consistently highlight socioeconomic inequalities in adolescent health, with young people from less affluent families reporting lower life satisfaction, more frequent psychosomatic complaints, and higher levels of depressive symptoms than their more privileged peers (HBSC study, 2022). Such disparities extend to suicidality: a large multi-country study in 59 low- and middle-income countries found that suicidal ideation, planning, and attempts were all more common among adolescents from disadvantaged backgrounds (Uddin et al., 2019). Similarly, a nationally representative U.S. study showed that low family income was a strong predictor of suicide attempts, alongside other vulnerabilities such as minority status and comorbid mental health problems (Lawrence et al., 2021).

Explanations for these inequalities point to the impact of perceived material deprivation. Feeling less well off than peers can heighten stress, limit coping resources, and reinforce feelings of hopelessness, particularly during adolescence when social comparison around material well-being is especially salient (Piera Pi-Sunyer et al., 2023; Smith et al., 2020). Luxembourg data reflect this broader pattern: socioeconomic position remains a fundamental determinant of adolescent health, with young people from less well off families consistently reporting poorer outcomes (Catunda et al., 2023a; Kirkbride et al., 2024). The persistence and in some cases widening of these gaps between 2014 and 2022 is consistent with evidence that recent contextual stressors, such as the COVID-19 pandemic

and rising cost of living, have disproportionately affected disadvantaged families and may have deepened mental health inequalities among adolescents (McGorry et al., 2025; Mmari & Moreau, 2025). Preventive strategies should therefore integrate a strong equity perspective. This means ensuring that support reaches adolescents in less advantaged families, while also maintaining universal measures that reduce stigma and foster resilience across all social groups.

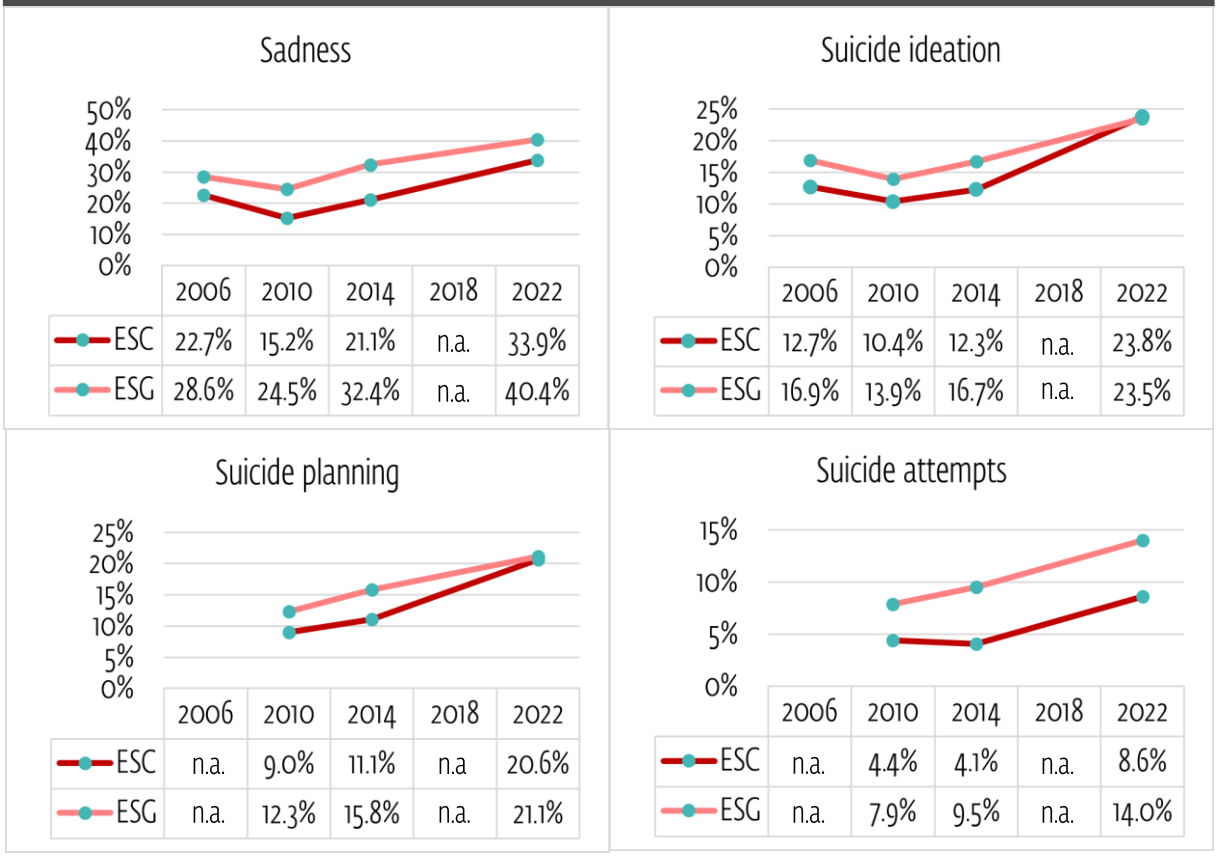
Educational track differences

In Luxembourg, educational track in the HBSC survey is operationalized as a distinction between classic secondary education (ESC) and general secondary education (ESG). ESG encompasses heterogeneous pathways, including lower general secondary education classes in the preparatory and guidance routes, as well as upper general secondary education classes. While vocational training constitutes a distinct formally vocational pathway within the education system, for the purpose of this report, it is also included under the ESG umbrella.

Differences between educational track (ESC and ESG) are visible across outcomes, though the size of the gaps varies. For sadness, ESG students consistently reported higher prevalence than their ESC peers. In 2022, 40.4% of ESG students reported prolonged sadness compared with 33.9% in ESC, continuing a pattern already present in earlier waves. For suicidal ideation, disparities that were evident in earlier years have diminished over time. ESG students reported higher prevalence in 2006 and 2010, while the gap narrowed in 2014 and by 2022 levels were nearly identical (23.8% vs. 23.5%). Suicide planning followed a similar trend. ESG students reported higher prevalence in 2010 and 2014, but by 2022 the gap had largely disappeared (21.1% vs. 20.6%). By contrast, suicide attempts show the clearest and most persistent disparity. ESG students consistently reported higher prevalence: 7.9% vs. 4.4% in 2010, 9.5% vs. 4.1% in 2014, and 14.0% vs. 8.6% in 2022. This widening gap suggests a heightened vulnerability among students in the ESG track, particularly regarding progression from ideation and planning to attempt.

Evidence from several European countries shows consistent differences in suicidal behaviours by educational track, particularly for students enrolled in vocational education. In Belgium, girls in vocational secondary education reported much higher rates of suicidal ideation (35%) compared to those in general education (16%) (Dierckens et al., 2019). In Norway, vocational-track students also reported poorer mental health and higher suicidal ideation than their peers in general classes (Dalen, 2012; Goll et al., 2024). In Germany, a recent survey found that 23% of vocational students reported suicidal thoughts, nearly three times the national adolescent average (Lamlé et al., 2023). These international findings help to situate the Luxembourg results within a broader European context of educational-track inequalities, while acknowledging differences in how educational pathways are structured across countries.

Figure 9: Prevalence of suicidal behaviour over time (2006-2022) by educational track



Taken together, this evidence suggests that vocational-track students across Europe may be more vulnerable to suicidal behaviours than peers in general education. In Luxembourg, however, the absence of educational track gaps in suicidal ideation and planning in 2022 contrasts with findings from other countries, suggesting that emotional distress is now widespread across both educational settings. Yet the persistence of disparities in suicide attempts indicates that students from general track (ESG) may face additional challenges. While these mechanisms are not directly examined in the present analyses, previous research on educational inequalities has highlighted several factors that may contribute to such patterns, including greater socioeconomic insecurity, perceived stigma associated with non-academic pathways, and fewer available support resources within families and social environments (OECD, 2023; Spruyt et al., 2015). These factors may be particularly relevant given the social composition and heterogeneity of the ESG track in Luxembourg. The educational context therefore offers an important setting for preventive interventions, both to mitigate everyday challenges and to respond to the broader rise in adolescent distress.

The current chapter showed that the prevalence of indicators of suicidal behaviour among adolescents in Luxembourg, including sadness, suicidal ideation, planning, and attempts, have all increased between 2006 and 2022. These concerning trends highlight the need to move beyond describing prevalence and examine the factors that contribute to suicide risk.

The following chapters will examine suicide risk according to adolescents' health lifestyles and gender identity. In order to examine these specific aspects of suicidal behaviour among adolescents in Luxembourg more in detail, the next chapters draw on findings from two peer-reviewed articles:

- Bitar, S., Mendes, F. G., Ferreira, J. L., Samuel, R., & Catunda, C. (2026). Adolescent health lifestyles and suicidality: Emerging risks in a latent class analysis. Cambridge Prisms: Global Mental Health..

- Bitar, S., Mendes, F. G., Lopes Ferreira, J., & Catunda, C. (under review). *Disparities in adolescent well-being and suicidal behaviours among cisgender and gender minority youth: Moderating effects of bullying and peer support.* Manuscript under review.

Adolescent health lifestyles and suicidality

The current chapter is based on a published peer-reviewed article, for more details, please refer to:

- Bitar, S., Mendes, F. G., Ferreira, J. L., Samuel, R., & Catunda, C. (2026). Adolescent health lifestyles and suicidality: Emerging risks in a latent class analysis. Cambridge Prisms: Global Mental Health..

Introduction

While social inequalities remain key determinants, adolescents' everyday health behaviours also play a central role in shaping vulnerability. A substantial body of research has linked substance use, including alcohol, tobacco, and e-cigarettes, to elevated risks of suicidal ideation and attempts (Javed et al., 2022; Lee et al., 2021; Wu et al., 2004). Similarly, physical inactivity (Michael et al., 2020), poor diet such as low fruit and vegetable consumption or high intake of sugary drinks (Heslin & McNulty, 2023; Shawon et al., 2023) and problematic social media use (Sedgwick et al., 2019) have each been associated with poorer mental health and greater suicidality. Adolescence is a particularly sensitive period, as these behaviours typically emerge during this developmental stage, shaped by peer influence, identity exploration, and social environments (Patton et al., 2016b).

Crucially, these behaviours rarely occur in isolation. Instead, they tend to cluster together into broader health lifestyles that reflect both individual choices and structural conditions (Cockerham, 2005; Mollborn et al., 2021). Consistent with cumulative risk theory, the co-occurrence of multiple health-compromising behaviours may amplify susceptibility to depression and suicidality, beyond the effect of any single risk behaviour (Xiao et al., 2019). Examining health lifestyles, rather than single behaviours, provides a more nuanced understanding of which groups of young people are most vulnerable.

To capture this complexity, this chapter applies a person-centred approach using latent class analysis (LCA) to identify distinct health lifestyle classes among adolescents in Luxembourg. By examining how these classes relate to suicidal ideation and suicide attempts, the analysis provides a more comprehensive picture of behavioural pathways to suicidality, complementing the trends and social inequalities described in the previous chapter.

Methods

Health lifestyle behaviours variables

Seven indicators were used to describe adolescents' health lifestyles including:

- Fruit consumption: Adolescents who reported eating fruit at least once a day were classified as daily consumers, consistent with public health recommendations (Vereecken et al., 2015).
- Vegetable consumption: Adolescents who reported eating vegetables at least once a day were similarly classified as daily consumers (Vereecken et al., 2015).
- Physical activity: Following WHO guidelines, adolescents who reported at least 60 minutes of physical activity every day in the past week were classified as meeting the recommendation (*WHO Guidelines on Physical Activity and Sedentary Behaviour*, 2020).

- Cigarette use: Adolescents who reported smoking cigarettes on at least one day in the past 30 days were classified as current smokers (Charrier et al., 2024).
- E-cigarette use: Adolescents who reported vaping on at least one day in the past 30 days were classified as current e-cigarette users.
- Alcohol use: Adolescents who reported drinking alcohol on at least one day in the past 30 days were classified as current alcohol users.
- Problematic social media use: The Social Media Disorder Scale (van den Eijnden et al., 2016) was used to assess addiction-like social media behaviours. Adolescents reporting six or more symptoms were classified as problematic users (Boer et al., 2022).

Suicidal behaviour variables

Two questions were used to assess suicidal behaviours:

- Suicidal ideation: "During the past 12 months, did you ever consider suicide?" (yes/no).
- Suicide attempts: "During the past 12 months, how many times did you actually attempt suicide?" Responses were grouped into no attempt vs at least one attempt.

Statistical Analyses

To identify subgroups of adolescents with similar health lifestyle patterns, we applied LCA, a statistical method that groups individuals according to shared behavioural profiles (Weller et al., 2020). The number of classes was chosen using standard criteria, including statistical fit, class size, and interpretability (Nagin, 2009). Each class was then described in terms of its behaviours and sociodemographic characteristics.

Following, we examined the associations between health lifestyle classes and suicidal behaviours (ideation and attempts) using hierarchical logistic regression models, which account for the clustering of students within school classes. Both crude and adjusted models were estimated, with adjustments for age, migrant status, family structure, family affluence, and educational track.

Results and discussion

Latent class analysis identified five distinct health lifestyle patterns among adolescents in Luxembourg. As shown in Figure 10 each class reflects a unique combination of dietary habits, physical activity, substance use, and social media behaviours.

Below, we describe the five classes and the extent to which each behaviour is pronounced within them:

- Class 1 – Healthy behaviours (23.4%) showed much higher-than-average daily fruit (100%) and vegetable (88.6%) consumption and higher physical activity (24.3%). Smoking (5.4%), e-cigarette use (7.9%), alcohol use (12.9%), and problematic social media use (5.8%) were all well below the sample averages.

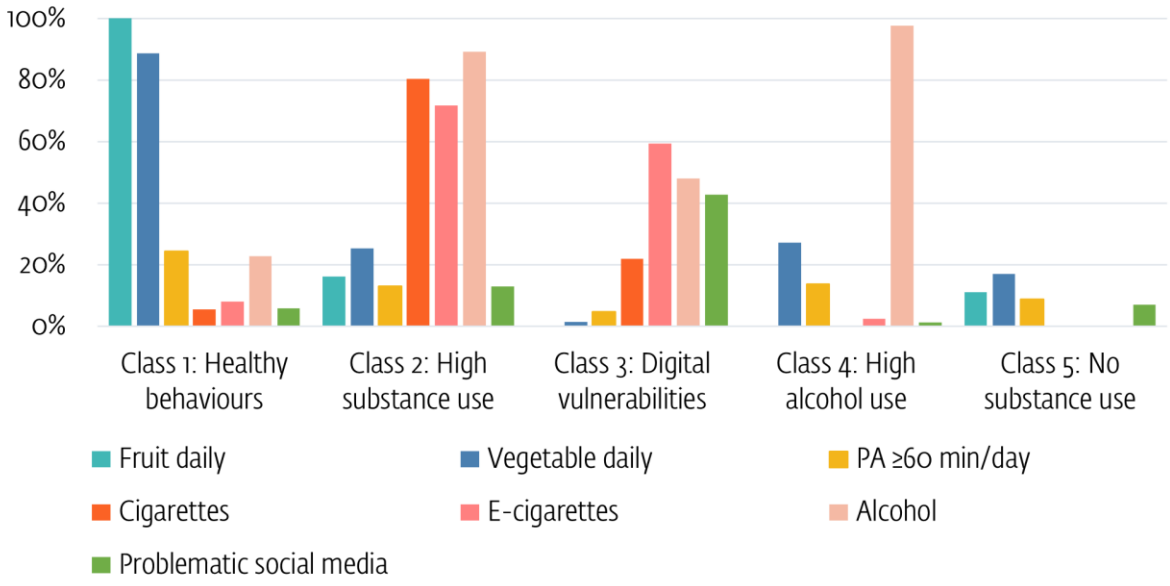
- Class 2 – High substance use (15.3%) characterised by low daily fruit (16.1%) and vegetable intake (25.3%) and very high levels of substance use: cigarette smoking (80.3%), e-cigarette use (71.7%), and alcohol consumption (89.1%). Problematic social media use (12.8%) was slightly above average.

- Class 3 – Digital vulnerabilities (5.2%) displayed the lowest levels of healthy behaviours, including no daily fruit consumption (0%), minimal vegetable intake (1.3%), and very low physical activity (4.7%). E-cigarette use was elevated (59.4%), and problematic social media use was the highest of all classes (42.8%).

- Class 4 – High alcohol use (12.2%) marked by near-universal alcohol use (97.6%) and very low levels of other substances: cigarette smoking (0.0%), e-cigarette use (2.4%), and problematic social media use (1.1%). Healthy behaviours were also low (0% daily fruit, 27.1% daily vegetables, 13.7% physical activity).

- Class 5 – No substance use (43.9%) characterised by below-average fruit (11.1%) and vegetable consumption (16.9%), low physical activity (8.8%), and a complete absence of tobacco, e-cigarette, and alcohol use (0.0% for all).

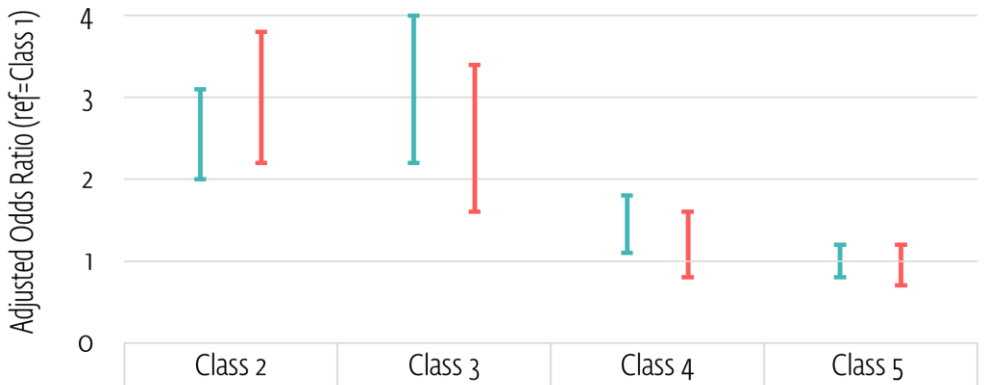
Figure 10: Distribution of health lifestyle behaviours across the identified classes



When examining associations with suicidal behaviours (Figure 11), clear differences emerged across classes. Compared with adolescents in the healthy group (Class 1), those in Class 2 (High substance use) had more than twice the odds of suicidal ideation (odds ratio, OR = 2.5; 95% confidence interval, CI: 2.0–3.1) and almost three times the odds of a suicide attempt (OR = 2.9, 95% CI: 2.2–3.8). Similarly, adolescents in Class 3 (Digital vulnerabilities) also showed significantly elevated risks of both suicidal ideation (OR = 3.0, 95% CI: 2.2–4.0) and suicide attempt (OR = 2.3, 95% CI: 1.6–3.4). In contrast, Class 4 (High alcohol use) was linked to higher suicidal ideation (OR = 1.4, 95% CI: 1.1–1.8) but showed no significant association with suicide attempts. Finally, adolescents in Class 5 (No substance use) did not differ from the healthy group on either outcome (additional descriptive results are provided in (Bitar et al., 2026)).

The pattern observed in Class 2 (High substance use) supports the idea that multiple health-compromising behaviours amplify vulnerability to poor mental health outcomes (Xiao & Lu, 2019). Adolescents in this group combined cigarette smoking, e-cigarette use, and alcohol consumption with poor diet. Each of these behaviours has been linked to sleep disruption, difficulties in emotional regulation, and reduced psychological stability (Khanna et al., 2019; Phiri et al., 2023; Riehm et al., 2019). When combined, the burden of these risks appears to increase susceptibility to depression, hopelessness, and ultimately suicidality (Campbell et al., 2020).

Figure 11: Adjusted associations between health lifestyle classes and suicidal behaviours



	Class 2	Class 3	Class 4	Class 5
Suicidal ideation	2.50	3.00	1.40	1.00
Suicidal attempts	2.90	2.30	1.10	0.90

Note. *Adjusted odds ratios compare each lifestyle class with Class 1 ("Healthy behaviours"), which serves as the reference (OR = 1). ORs above 1 indicate increased odds of suicidal ideation or attempts. Error bars show 95% confidence intervals.*

The profile of Class 3 (Digital vulnerabilities) points to a different pathway. Adolescents in this class reported high vaping and problematic social media use, alongside very poor diet and almost no physical activity. Previous research has shown that problematic social media use is associated with sleep disturbance, negative social comparison, and cyberbullying (Paakkari et al., 2021), while vaping has been linked to impulsivity and difficulties in regulating emotions (Javed et al., 2022). Together, and in the absence of protective routines such as healthy eating and physical activity, these behaviours create a specific pattern of digital vulnerability. Emerging longitudinal studies also suggest that digital overuse can reinforce internalising symptoms, which in turn increase the likelihood of vaping, creating a self-reinforcing cycle (Zhang et al., 2023). These findings highlight the importance of considering not only traditional health behaviours but also the growing impact of digital environments.

In Class 4 (High alcohol use), adolescents reported near-universal drinking but little involvement in other risky behaviours. This group showed higher odds of suicidal ideation but not suicide attempts. Heavy alcohol use has long been associated with increased suicidal ideation among adolescents (Lee et al., 2021). However, the progression from suicidal thoughts to attempts may require additional psychological or contextual factors, such as emotional dysregulation, reduced fear of self-harm, or disconnection from protective environments (Klonsky et al., 2021), which were not clearly reflected in the behavioural pattern observed in this group. The relative preservation of physical activity in this group may also provide additional protection.

Finally, Class 5 (No substance use) did not differ from the healthy group in terms of suicidal ideation or attempts. This highlights the protective role of avoiding tobacco, alcohol, and vaping, even when diet quality and physical activity are less favourable (Mars et al., 2019). In this group, abstinence from substance use appears to outweigh the risks of other behaviours, offering an important buffer against suicidality.

In sum, adolescents' health behaviours cluster into distinct lifestyle patterns that significantly influence their suicidal behaviours. Individuals with multiple risk behaviours, especially substance use, and problematic social media face the highest odds of suicidal ideation and attempts, whereas adolescents who abstain from substance use show odds comparable to the healthy group, even with other less healthy habits. These findings highlight the cumulative and interconnected nature of health behaviours in shaping adolescent mental wellbeing. Promoting balanced, protective lifestyles, both offline and online may be key to reducing suicidality among youth.

Gender minority and suicidality

The current chapter is based on a published peer-reviewed article, for more details, please refer to:

- Bitar, S., Mendes, F. G., Lopes Ferreira, J., & Catunda, C. (under review). *Disparities in adolescent well-being and suicidal behaviours among cisgender and gender minority youth: Moderating effects of bullying and peer support.* Manuscript under review.

Introduction

Non-cisgender adolescents, whose gender identity differs from their sex assigned at birth, consistently report lower levels of well-being (Clark et al., 2014) and higher rates of suicidal ideation and suicide attempts compared to their cisgender peers (Mesznik et al., 2025).

The minority stress theory (Meyer, 2003) provides a valuable framework for understanding these disparities, suggesting that chronic exposure to discrimination contributes to internalized stigma resulting in mental health problems. Gender minority adolescents are more likely to face unique stressors, including familial rejection, victimization, and social exclusion, that intensify psychosocial distress (Russell & Fish, 2016; Tebbe & Budge, 2022).

From an ecological perspective, peers form a central part of the adolescent microsystem, exerting strong influence on experiences of belonging, validation, or rejection (Blum et al., 2022; Pfeifer & Berkman, 2018). Supportive peer environments can provide protection through affirmation, empathy, and shared experiences (Lynn Mulvey et al., 2017), while negative contexts, especially bullying, are strongly linked to increased suicide risk (Lynn Mulvey et al., 2017). For gender minority adolescents, peer support may be particularly critical in offsetting risks by providing identity affirmation and fostering resilience (McDonald, 2018). Conversely, bullying may exacerbate minority stress, leading to emotional distress and heightened vulnerability to suicidality (Henderson et al., 2022).

Despite growing recognition of these dynamics, important gaps remain in understanding how peer environments shape suicide risk among gender minority adolescents. In particular, little is known about whether the protective effects of peer support and the harmful effects of bullying operate similarly for non-cisgender and cisgender adolescents.

This chapter therefore examines disparities in suicidal behaviours between cisgender and non-cisgender adolescents in Luxembourg and assesses the moderating role of bullying and peer support.

Methods

Gender status

Gender status was assessed through two questions. The first question asked about sex assigned at birth with response options including "Male" or "Female". The second question asked about gender identity, with response options including: "I identify as a boy", "I identify as a girl", "I identify as neither a boy nor a girl" and "Other/s".

Responses to these two questions were combined to create a binary variable indicating gender status: participants were classified as either cisgender (gender identity matching sex assigned at birth) or non-cisgender (gender identity not matching sex assigned at birth), the later considered as gender minority.

Suicidal behaviours

Two questions were used to assess suicidal behaviours:

- Suicidal ideation: "During the past 12 months, did you ever consider suicide?" (yes/no).
- Suicide attempts: "During the past 12 months, how many times did you actually attempt suicide?" Responses were grouped into no attempt vs at least one attempt.

Peer context

- *Peer support*: Assessed with the Multidimensional Scale of Perceived Social Support (Dahlem et al., 1991). Adolescents were asked to what extent they agreed with statements assessing perceived support from friends. Responses were recorded on a seven-point Likert scale ranging from "very strongly disagree" to "very strongly agree". Adolescents with a mean score ≥5.5 were classified as having high peer support.
- *Bullying at school:* Based on the HBSC item adapted from the Olweus Bully/Victim Questionnaire (Cikili-Uytun et al., 2022). Adolescents were asked whether they had been bullied at school, with five response options: (1) "I have not been bullied at school in the past couple of months"; (2) "It has happened once or twice"; (3) "two to three times a month"; (4) "About once a week"; and (5) "Several times a week. Bullying was considered present if it occurred at least 2–3 times per month.

Statistical analyses

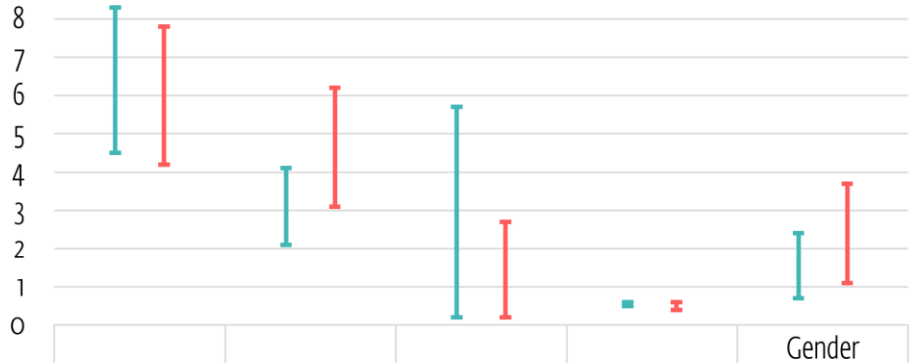
Weighted logistic regression models were used for suicidal ideation and suicide attempts. Both crude and adjusted models were estimated, with adjustments for sociodemographic covariates (age, migrant status, family structure, family affluence and school type). Interaction terms tested whether bullying and peer support moderated the associations between gender identity and outcomes. In cases statistically significant interactions were detected, stratified analyses were conducted to further explore the association within subgroups. Following VanderWeele and Knol guidelines (Knol & VanderWeele, 2012), we applied a common reference group approach, where all comparisons were made relative to a single reference category.

Results and discussion

Among the 5 966 adolescents who provided information on gender identity, 50.4% identified as boys, 46.1% as girls, and 3.5% as gender minority adolescents. Marked disparities emerged between cisgender and non-cisgender adolescents. Suicide ideation was reported by 64.2% of gender minority adolescents, compared to 29.6% of cisgender girls and 14.8% of cisgender boys. Suicide attempts showed the sharpest contrast: 42.2% of gender minority adolescents had attempted suicide in the past year, versus 14.1% of cisgender girls and 7% of cisgender boys. Regression analyses confirmed these gaps, with gender minority adolescents showing six times higher odds of suicidal ideation (OR = 6.0, 95% CI: 4.5–8.3) and nearly six times higher odds of attempts (OR = 5.7, 95% CI: 4.2–7.8). Figure

12 provides an overview of the adjusted associations, including the main effects of gender minority status, bullying, and peer support, as well as their interactions (see Bitar et al., 2025 for full adjusted and unadjusted models).

Figure 12: Adjusted associations between gender identity, bullying, peer support, and suicidal behaviours



	Gender minority	Bullied by school peers	Gender minority Bullied	High peer support	Gender minority High peer support
Suicidal ideation	6.00	2.90	1.20	0.50	1.30
Suicidal attempts	5.70	4.40	0.80	0.50	2.00

Note. *Values represent adjusted odds ratios (ORs). ORs above 1 indicate increased odds of suicidal ideation or attempts. Error bars represent 95% confidence intervals.*

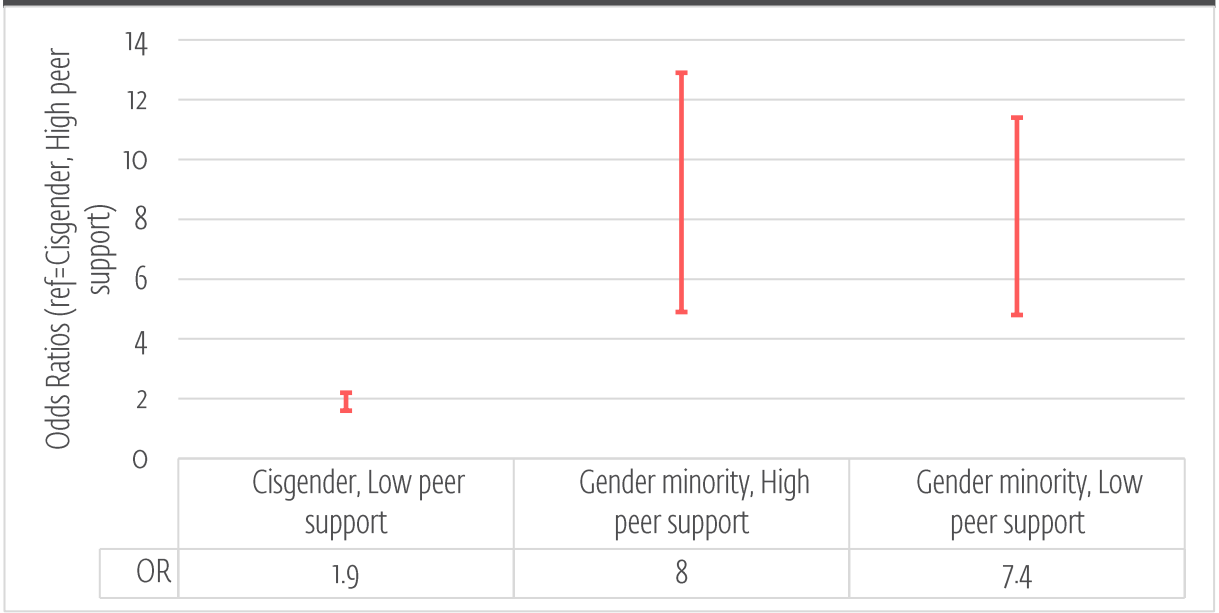
A meta-analysis of studies published up to 2018 reported pooled prevalence estimates of 28% for suicidal ideation and 14.8% for suicide attempts among gender minority adolescents (Surace et al., 2021), highlighting the severity and consistency of these risks across studies. These estimates are substantially lower than those observed in the present study (64.2% and 42.2%, respectively), likely reflecting both the inclusion of more recent data and methodological differences. In particular, the school-based sampling used in the Luxembourg HBSC survey may provide a more representative estimate of the challenges faced by gender minority adolescents in the general population, because it also reaches young people who are not publicly out or connected to LGBTQ+ communities or support services, and who would therefore be underrepresented in clinic- or community-based samples. A large French school-based study similarly found that 30.7% of sexual minority adolescents reported having attempted suicide, compared to 10.6% of their heterosexual peers (Wang et al., 2023). In Luxembourg, the small and close-knit nature of society may heighten visibility and perceived vulnerability among gender minority youth, which could amplify experiences of scrutiny or perceived vulnerability. Similar mechanisms have been described in smaller or less anonymous social settings, where limited anonymity has been associated with heightened minority stress and psychological distress among sexual and gender minority populations (Liu et al., 2023).

Bullying at school was strongly associated with suicidal behaviours across all adolescents. Those who reported being bullied had higher odds of both suicidal ideation (OR = 2.9, 95% CI: 2.1–4.1) and suicide attempts (OR = 4.4, 95% CI: 3.1–6.2). However, no statistically significant interaction was found, indicating that the effect of bullying on suicidality did not differ significantly between cisgender and non-cisgender adolescents. Still, previous research suggests that

gender minority adolescents may experience more persistent and identity-based forms of victimisation (Earnshaw et al., 2016; Henderson et al., 2022).

Peer support was associated with lower risks of both suicidal ideation (OR = 0.5, 95% CI: 0.5–0.6) and suicide attempts (OR = 0.5, 95% CI: 0.4–0.6). However, interaction analyses showed that the protective effect of peer support against suicide attempts was weaker for gender minority adolescents (interaction OR = 2.0, 95% CI: 1.1–3.7). Stratified analyses confirmed that while strong peer support reduced suicide attempts among cisgender adolescents (OR = 1.9, 95% CI: 1.6–2.2), gender minority adolescents remained at high risk regardless of their level of peer support (OR = 8.0, 95% CI: 4.9–12.9 for high peer support; OR = 7.4, 95% CI: 4.8–11.4 for low peer support; Figure 13). This suggests that general peer connectedness, while beneficial, may not be sufficient to offset the specific risks faced by gender minority youth if it does not explicitly affirm their gender identity (Johns et al., 2018; Price-Feeney et al., 2020).

Figure 13: Stratified analysis for the association between gender identity and suicidal attempt, by peer support



Note. *ORs represent the relative odds of suicide attempts compared with cisgender adolescents with high peer support (reference group). Values above 1 indicate increased odds. Error bars show 95% confidence intervals.*

In sum, the findings reveal pronounced disparities in suicidality of cisgender and non-cisgender adolescents, with gender minority youth facing substantially higher risks of suicidal ideation and attempts. Bullying strongly increased suicide risk across all groups, while peer support offered protection but was less effective for gender minority adolescents. This suggests that the general peer connectedness is insufficient. Affirming and inclusive social environments might reduce suicidality risk in gender minority youth.

Conclusions and perspectives

From findings to action

The results presented in the preceding chapters point to a complex picture of adolescent suicidality. The rise in sadness, ideation, planning, and suicide attempts over the past decade underscores that these behaviours are not rare events at the margins but part of the everyday reality of many young people in Luxembourg, a pattern that mirrors broader trends observed across several European countries. Beyond the numbers, the analyses highlighted two important dimensions: first, the ways in which health-related behaviours cluster into distinct lifestyles that may either buffer or exacerbate mental health risks; and second, the heightened vulnerability of gender minority adolescents, especially in the context of bullying and exclusion.

These findings suggest that suicide prevention cannot be approached with a single tool or by targeting one risk in isolation. Instead, effective strategies will need to be layered and multifaceted, addressing both the everyday practices of young people and the social contexts in which they grow up.

Tackling social disparities as a core dimension of prevention

Social inequalities remain one of the most consistent determinants of health. In Luxembourg, our trend analyses revealed persistent differences in suicidality by gender, age, nationality, socioeconomic status, and educational track. These disparities are not the result of individual choices alone but reflect broader structural barriers, such as unequal access to health services, limited family resources, and challenges linked to educational conditions and adaptation in a multilingual, multicultural environment.

Addressing these inequalities requires a structural and cross-sectoral approach. Luxembourg has already taken important steps through National Action Plan on the Rights of the Child 2022–2026 (Zesumme fir d'Rechter vum Kand) and the National Mental Health Plan 2024–2028 (Plan National Santé Mentale Luxembourg). Both strategies explicitly emphasize that reducing disparities is essential for improving child and adolescent well-being. They call for more accessible and adapted youth mental health services, stronger intercultural competence in schools and health settings, and reinforced support for vulnerable families and disadvantaged groups, including those affected by poverty, migration, or social isolation.

In practice, this could involve:

- Expanding youth mental health services to underserved areas and ensuring they are affordable, accessible, and adapted to young people's needs.
- Promoting intercultural competence among teachers, school counsellors, and health professionals to better support adolescents from diverse national and migration backgrounds.
- Targeted family and school support, complemented by broad school-wide measures that improve the overall school environment and reduce structural barriers to care.

By embedding suicide prevention within broader equity initiatives, Luxembourg can ensure that the most vulnerable adolescents are not left behind.

Integrating lifestyle behaviours into suicide prevention

An additional key finding relates to the clustering of health behaviours into distinct lifestyle patterns. Adolescents do not simply smoke, drink or spend time online in isolation; rather, these behaviours tend to co-occur in a structured way, which can either protect or compromise their well-being. Traditional prevention campaigns often target individual behaviours in isolation, yet our results—consistent with international evidence—suggest that prevention strategies should instead address clusters of concomitant risks, likely shaped by common underlying determinants (Simonton et al., 2018; Webb et al., 2016).

In Luxembourg, several national strategies already promote healthy lifestyles, including the Plan National Santé and long-standing initiatives in nutrition, physical activity (Gesond iessen Méi beweegen), tobacco (Plan National de Lutte contre le tabagisme), and alcohol (Plan d'Action Luxembourgeois de réduction du Mésusage de l'Alcool). Yet these efforts are typically implemented in parallel, each addressing one behaviour at a time. Our results highlight the need to move towards a more integrated approach, where everyday health practices are considered together and explicitly linked to adolescent mental health and suicide prevention.

From this perspective, the holistic approach promoted by the WHO Health-Promoting Schools framework offers a promising direction (Programs et al., 1995). By combining health education with improvements to the physical and social environment of schools, and by linking schools with community resources and health services, this integrated model has shown effectiveness in improving physical activity, diet, and smoking outcomes (Langford et al., 2014). Such integrated interventions combining environmental changes and health education, may therefore have greater impact than isolated, behaviour-specific interventions.

Early identification of these patterns is key. Broad-based screening, as advocated by Webb et al. (2016), using short questionnaires administered in schools, would enable the rapid detection of at-risk profiles and the referral of adolescents to specialist services. For example, adolescents who combine substance use with other unhealthy behaviours could benefit from multi-component programmes integrating substance use prevention, engaging physical activity, and practical nutrition education (Georgie J. et al., 2016).

Finally, our analyses suggest that patterns of substance use play a central role in shaping vulnerability to suicidal behaviours. Adolescents who abstain from tobacco, alcohol, and vaping present lower levels of suicidality, even when other risk behaviours are observed. This underscores the importance of prioritising substance use prevention within a broader, integrated strategy to reduce adolescent suicidality.

Supporting gender minority adolescents through inclusive environments across schools, families and community settings

Our results underscored the heightened vulnerability of gender minority adolescents, who reported substantially higher levels of suicidal ideation and attempts compared with their cisgender peers. International evidence showing

that identity-based victimization and minority stress contribute to severe psychological distress, could help understanding these findings (Earnshaw et al., 2016; Henderson et al., 2022; Schlief et al., 2023).

Bullying by peers at school also emerged as an important factor linked to suicidal behaviours among adolescents. Its impact was similar across genders, suggesting that peer victimisation is a universal risk factor. Previous research, however, indicates that standard measures may underestimate the unique impact of identity-based harassment on gender minority youth (Gower et al., 2018).

Peer support also emerged as a protective factor, associated with reduced risks of suicidal ideation and attempts overall. However, the protective effect against suicide attempts was weaker for gender minority adolescents: even those with strong peer support remained at high risk. This highlights that while supportive friendships matter, general peer connectedness alone may not be sufficient to buffer against the specific vulnerabilities linked to minority stress. These findings point to the importance of initiatives that promote identity-affirming environments, fostering acceptance and belonging.

Luxembourg has a strong policy foundation to address these challenges. The updated National Action Plan for the Promotion of LGBTIQ+ Rights (PAN LGBTIQ+), adopted in 2025, sets out 81 measures and 147 actions across education, health, family, employment, and other domains. A central priority of the plan is to promote inclusive school environments and strengthen protection against discrimination. The National Action Plan on the Rights of the Child 2022–2026 similarly emphasizes protection and participation for all children, regardless of gender identity.

To translate these commitments into practice, actions across schools, families, and community settings could:

- Implement comprehensive anti-bullying programs that explicitly address identity-based harassment and equip adults with practical intervention tools (Domínguez-Martínez & Robles, 2019).
- Strengthen peer-support systems through programs that go beyond general connectedness to explicitly affirm diverse gender identities, such as peer-led ally networks, mentorship opportunities, or safe spaces where gender minority youth can share experiences (Price-Feeney et al., 2020; Vance et al., 2024).
- Ensure positive visibility and representation of gender diversity across educational, cultural, and community activities, offering role models and reducing stigma (Schlief et al., 2023).
- Promote adult protective factors by training teachers, counsellors, health professionals, youth workers, and family support providers in identity-affirming, non-stigmatizing practices, and by strengthening referral pathways to supportive services (Mustanski et al., 2014; Taliaferro et al., 2019).

Mental health professionals can further contribute by providing culturally sensitive, identity-affirming care and by collaborating with schools and families to ensure that adolescents receive timely, inclusive support within safe environments.

Overall, the findings of this report highlight that adolescent suicide prevention benefits from a comprehensive and integrated perspective. Addressing social disparities, recognising identity-related vulnerabilities, and considering the interplay of health-related behaviours provide complementary insights into how risk and protection are shaped during adolescence. Together, these results underline the importance of combining equity, inclusion, and health promotion within existing frameworks to strengthen the well-being and resilience of all young people in Luxembourg.

Appendix

Table 1: Sociodemographic characteristics by survey year

	2006	2010	2014	2022	*p*-value[1]
Age	**N = 6 172**	**N = 6 858**	**N = 5 426**	**N = 6 078**	
13-14 years	1 870 (30.3%)	2 082 (30.4%)	1 699 (31.3%)	2 195 (36.1%)	
15-16 years	2 164 (35.1%)	2 322 (33.9%)	2 014 (37.1%)	2 286 (37.6%)	*p* < .001
17-18 years	2 138 (34.6%)	2 454 (35.8%)	1 713 (31.6%)	1 597 (26.3%)	
Gender	**N = 6 167**	**N = 6 850**	**N = 5 409**	**N = 6 015**	
Girls	3 012 (48.8%)	3 416 (49.9%)	2 843 (52.6%)	2 903 (48.3%)	*p* < .001
Boys	3 155 (51.2%)	3 434 (50.1%)	2 566 (47.4%)	3 112 (51.7%)	
Nationality	**N = 6 172**	**N = 6 854**	**N = 5 416**	**N = 6 078**	
Luxembourgish	4 236 (68.6%)	4 496 (65.6%)	3 486 (64.4%)	3 857 (63.5%)	*p* < .001
Not Luxembourgish	1 937 (31.4%)	2 358 (34.4%)	1 930 (35.6%)	2 221 (36.5%)	
Perceived family wealth	**N = 5 983**	**N = 6 432**	**N = 5 161**	**N = 5 930**	
Not well off	458 (7.7%)	523 (8.1%)	563 (10.9%)	427 (7.2%)	*p* < .001
Average	2 020 (33.8%)	2 464 (38.3%)	2 162 (41.9%)	2 394 (40.4%)	
Well off	3 505 (58.6%)	3 445 (53.6%)	2 436 (47.2%)	3 109 (52.4%)	
Educational Track	**N = 6 172**	**N = 6 858**	**N =5 426**	**N = 6 078**	
ESC	1 816 (29.4%)	2 313 (33.7%)	1 933 (35.6%)	2 492 (41.0%)	*p* < .001
ESG	4 356 (70.6%)	4 545 (66.3%)	3 493 (64.4%)	3 586 (59.0%)	

[1]Pearson's Chi-squared test

Table 2: Prevalence of sadness according to sociodemographic groups over time

	2006	2010	2014	2022	*p*-value[1]
Age	**N = 6 172**	**N = 6 858**	**N = 5 426**	**N = 6 078**	
13-14 years	22.5 (20.7-24.3)	20.1 (18.5-21.7)	26.3 (24.1-28.5)	34.3 (32.1-36.4)	
15-16 years	29.0 (27.1-30.9)	22.5 (20.8-24.1)	30.1 (28.0-32.2)	39.5 (37.4-41.6)	*p* < .001
17-18 years	28.5 (25.5-31.6)	21.3 (19.3-23.3)	28.5 (26.1-30.8)	39.6 (37.0-42.1)	
Gender	**N = 6 167**	**N = 6 850**	**N = 5 409**	**N = 6 015**	
Girls	33.5 (31.4-35.6)	28.2 (26.5-29.8)	35.9 (34.1-37.8)	48.7 (46.8-50.5)	*p* < .001
Boys	20.4 (18.7-22.1)	14.4 (13.2-15.7)	20.1 (18.5-21.7)	26.5 (24.8-28.1)	
Nationality	**N = 6 172**	**N = 6 854**	**N = 5 416**	**N = 6 078**	
Luxembourgish	26.5 (24.9-28.1)	19.2 (17.9-20.4)	27.2 (25.6-28.7)	36.4 (34.8-37.9)	*p* < .001
Not Luxembourgish	27.7 (25.1-30.2)	25.5 (23.6- 27.4)	30.7 (28.5-32.9)	40.2 (37.9-42.4)	
Perceived family wealth	**N = 5 983**	**N = 6 432**	**N = 5 161**	**N = 5 930**	
Not well off	42.5 (37.1- 47.9)	40.7 (36.1- 45.2)	42.1 (37.8-46.3)	58.6 (53.4-63.7)	*p* < .001
Average	27.7 (25.2-30.1)	21.9 (20.1-23.6)	28.6 (26.6-30.5)	40.1 (38.9-43.1)	
Well off	24.2 (22.4-25.9)	17.8 (16.5-19.1)	24.9 (23.1-26.7)	32.6 (30.9-34.3)	
Educational Track	**N = 6 172**	**N = 6 858**	**N =5 426**	**N = 6 078**	
ESC	22.7 (21.0-24.4)	15.2 (13.7-16.6)	21.1 (19.2-23.0)	33.9 (32.0-35.8)	*p* < .001
ESG	28.6 (26.8-30.4)	24.5 (23.1-25.9)	32.4 (30.8-34.1)	40.4 (38.7-42.1)	

[1]Pearson's Chi-squared test

Table 3: Prevalence of suicide ideation according to sociodemographic groups over time

	2006	2010	2014	2022	*p*-value[1]
Age	**N = 6 172**	**N = 6 854**	**N = 5 416**	**N = 6 078**	
13-14 years	17.1 (15.5-18.7)	14.4 (12.9-15.8)	16.5 (14.6-18.3)	23.3 (21.4-25.2)	
15-16 years	17.7 (27.1-30.9)	14.2 (20.8-24.1)	16.0 (28.0-32.2)	25.0 (37.4-41.6)	*p* < .001
17-18 years	12.3 (10.1-14.5)	9.8 (8.4-11.2)	12.8 (11.1-14.5)	22.3 (20.1-24.4)	
Gender	**N = 6 167**	**N = 6 850**	**N = 5 409**	**N = 6 015**	
Girls	18.8 (17.1-20.5)	15.3 (14.0-16.5)	19.2 (17.7-20.7)	31.2 (29.4-33.0)	*p* < .001
Boys	12.6 (11.2-13.8)	10.0 (9.0-11.1)	10.6 (9.3-11.8)	15.7 (14.3-17.0)	
Nationality	**N = 6 172**	**N = 6 854**	**N = 5 416**	**N = 6 078**	
Luxembourgish	15.4 (14.2-16.7)	12.2 (11.2-13.2)	14.9 (13.6- 16.1)	22.9 (21.5-24.3)	*p* < .001
Not Luxembourgish	16.0 (14.0-18.0)	13.5 (12.1-14.9)	15.7 (14.0-17.5)	25.1 (23.1-27.1)	
Perceived family wealth	**N = 5 983**	**N = 6 432**	**N = 5 161**	**N = 5 930**	
Not well off	29.8 (24.8-34.7)	25.3 (21.4-29.3)	26.1 (22.2-29.9)	38.8 (33.6-43.9)	*p* < .001
Average	15.8 (13.9-17.6)	13.2 (11.8-14.6)	14.4 (12.8-15.9)	27.1 (25.2-28.9)	
Well off	13.8 (12.5-15.2)	10.3 (9.3-11.3)	13.1 (11.7-14.5)	19.4 (17.9-20.8)	
Educational Track	**N = 6 172**	**N = 6 858**	**N =5 426**	**N = 6 078**	
ESC	12.7 (11.4-14.0)	10.4 (9.2-11.6)	12.3 (10.7-13.8)	23.8 (22.1-25.5)	*p* < .001
ESG	16.9 (15.4-18.3)	13.9 (12.8-14.9)	16.7 (15.4-18.1)	23.5 (22.0-25.0)	

[1]Pearson's Chi-squared test

Table 4: Prevalence of suicide planning according to sociodemographic groups over time

	2010	2014	2022	*p*-value[1]
Age	**N = 6 854**	**N = 5 416**	**N = 6 078**	
13-14 years	12.2 (10.8-13.5)	13.8 (12.1-15.5)	22.1 (20.3-23.4)	
15-16 years	12.3 (10.9-13.6)	15.0 (13.3-16.6)	21.3 (19.5-23.1)	*p* < .001
17-18 years	9.3 (7.9-10.7)	13.5 (11.7-15.2)	18.6 (16.6-20.7)	
Gender	**N = 6 850**	**N = 5 409**	**N = 6 015**	
Girls	13.1 (11.8-14.1)	16.5 (15.0-17.8)	27.1 (25.4-28.8)	*p* < .001
Boys	9.2 (8.2-10.2)	11.3 (10.0-12.6)	14.4 (13.0-15.7)	
Nationality	**N = 6 854**	**N = 5 416**	**N = 6 078**	
Luxembourgish	10.5 (9.6-11.5)	13.6 (12.4-14.7)	19.3 (18.0-25.6)	*p* < .001
Not Luxembourgish	12.4 (11.0- 13.8)	15.2 (13.5-16.9)	23.9 (21.9-25.9)	
Perceived family wealth	**N = 6 432**	**N = 5 161**	**N = 5 930**	
Not well off	20.5 (16.8- 24.2)	23.4 (19.7-27.0)	34.5 (29.6-39.3)	*p* < .001
Average	11.7 (10.3-13.1)	14.3 (12.7-15.8)	22.9 (21.1-24.7)	
Well off	9.2 (8.2-10.2)	11.6 (10.3-12.9)	17.8 (16.4-19.2)	
Educational Track	**N = 6 858**	**N =5 426**	**N = 6 078**	
ESC	9.0 (7.8-10.2)	11.1 (9.6-12.5)	20.6 (18.9-22.2)	*p* < .001
ESG	12.3 (11.3-13.3)	15.8 (14.5-17.1)	21.1 (19.6-22.5)	

[1]Pearson's Chi-squared test

Table 5: Prevalence of suicide attempt according to sociodemographic groups over time

	2010	2014	2022	*p*-value[1]
Age	**N = 6 854**	**N = 5 416**	**N = 6 078**	
13-14 years	8.3 (7.1-9.4)	8.7 (7.3-10.1)	12.8 (11.3-14.3)	*p* < .001
15-16 years	7.5 (6.4-8.5)	7.8 (6.6-9.0)	12.0 (10.6-13.5)	
17-18 years	4.7 (3.7-5.7)	6.3 (5.0-7.5)	9.9 (8.3-11.4)	
Gender	**N = 6 850**	**N = 5 409**	**N = 6 015**	
Girls	8.1 (7.1-9.1)	9.3 (8.1-10.4)	15.5 (14.1-16.8)	*p* < .001
Boys	5.3 (4.5-6.1)	5.7 (4.7-6.6)	7.7 (6.7-8.7)	
Nationality	**N = 6 854**	**N = 5 416**	**N = 6 078**	
Luxembourgish	5.8 (5.1-6.5)	6.9 (6.0- 7.8)	10.2 (9.2-11.2)	*p* < .001
Not Luxembourgish	8.4 (7.3- 9.5)	8.8 (7.4-10.)	14.7 (13.0-16.3)	
Perceived family wealth	**N = 6 432**	**N = 5 161**	**N = 5 930**	
Not well off	12.4 (9.5- 15.2)	15.2 (12.1-46.3)	22.7 (18.3-27.0)	*p* < .001
Average	7.4 (6.3-8.4)	6.2 (5.1-7.3)	12.8 (11.3-14.2)	
Well off	5.0 (4.2-5.7)	6.7 (5.6-7.7)	9.6 (8.4-10.6)	
Educational Track	**N = 6 858**	**N =5 426**	**N = 6 078**	
ESC	4.4 (3.6-5.3)	4.1 (3.2-5.0)	8.6 (7.5-9.7)	*p* < .001
ESG	7.9 (7.1-8.7)	9.5 (8.5-10.6)	14.0 (12.7-15.2)	

[1]Pearson's Chi-squared test

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Abbreviations

CI	Confidence Interval
COVID-19	Coronavirus Disease 2019
ESC	*Enseignement Secondaire Classique*
ESG	*Enseignement Secondaire Général*
FAS	Family Affluence Scale
HBSC	Health Behaviour in School-aged Children (study/survey)
SCRIPT	*Service de Coordination de la Recherche et de l'Innovation pédagogiques et technologiques*
LCA	Latent Class Analysis
LGBTIQ+	Lesbian, Gay, Bisexual, Transgender, Intersex, Queer/Questioning and other sexual and gender identities
OR	Odds Ratio

Reports on the Luxembourg HBSC Survey 2022

This report follows a series of 5 thematic reports based on the HBSC survey 2022:

- Mental health and well-being of school-aged children in Luxembourg
- Health behaviours of school-aged children in Luxembourg
- Risk behaviours of school-aged children in Luxembourg
- Social context of school-aged children in Luxembourg
- COVID-19 impact and trends in health of school-aged children from 2006-2022 in Luxembourg

The reports are available in English, French and German and can be downloaded from the website www.hbsc.lu. A methodological report and an interactive data visualization between 2006 and 2022 are also available in the website.

Report on the Luxembourg HBSC Survey 2022

HEALTH BEHAVIOUR IN SCHOOL-AGED CHILDREN (HBSC) STUDY

This report presents findings on suicidal behaviour among adolescents aged 13 to 18 years attending secondary schools in Luxembourg between 2006 and 2022. It examines trends and inequalities in sadness, suicidal ideation, suicide planning, and suicide attempts, based on nationally representative data from the Health Behaviour in School-aged Children (HBSC) survey waves.

Gender differences are evident across all indicators: compared with boys, girls reported sadness, suicidal thoughts, planning, and attempts more frequently. Age patterns differed across outcomes, with suicidal ideation and planning more frequent in mid-adolescence, and attempts reported more often by younger students. Other sociodemographic characteristics, such as family affluence, nationality, and school type, were also associated with differences in suicidality. Inequalities by family affluence were most pronounced, while those by nationality and school type were moderate.

This report further explores how health behaviours cluster into distinct lifestyle patterns combining diet, physical activity, substance use, and social media use. The analyses show that adolescents engaging in multiple risk behaviours (e.g., smoking, alcohol use, vaping, low physical activity, unhealthy diet, and problematic social media use) are more likely to report suicidal ideation or attempts, while those abstaining from substance use show lower levels of risk.

Finally, the report highlights the heightened vulnerability of gender minority adolescents, who report substantially higher levels of suicidal ideation and attempts than their cisgender peers. The findings underscore the need for inclusive and identity-affirming environments, as well as integrated prevention efforts that address both social inequalities and everyday health behaviours.

University of Luxembourg
Campus Belval
Maison de Sciences Humaines
11, Porte des Sciences
L-4366 Esch-sur-Alzette

www.hbsc.lu