

Introduction

Ultraviolet (UV) exposure at young age is significant risk for skin cancer in later life. Between 17 and 66% of schoolchildren in Ireland use no protection against the sun, and 3% have used an indoor tanning bed (see the overall report linked at the right bottom corner of this poster). This warrants further investigation and intervention. To our knowledge, there are no studies which have attempted to identify latent classes behind sun protection and tanning bed use combined. The aims of this study were (1) to test whether there are latent classes underlying sun protection behaviours and tanning bed use; (2a) whether children across latent classes have different socio-economic backgrounds and, (2b) risk for sunburn; and (3) whether the latent classes are associated with different levels of social support.

Based on earlier findings in the literature, we hypothesized that

- At least two groups (with high level of protection or high level of risk) will emerge.
- Children in the high protection group will more likely be girls, younger children, and children from higher social classes; children in the high risk group will more likely be boys, older children, and children of lower social classes.
- The high risk group will report significantly more sunburn episodes, both last summer and lifetime.
- The high risk group will report lower parental support.

Method

A nationally representative subsample of children participating in the 2018 Irish Health Behaviour in School-aged Children (HBSC) study was analysed ($n = 10,248$; mean age: 14.00 ± 1.90 years; 53.3% girls). Further details on the sample and the measures can be found in the methodological journal article linked at the right bottom corner of this poster.

A latent class analysis was performed in Mplus 6.0, using the four sun protection measures and sunbed use as dimensions. Derived classes were compared for socio-demographic characteristics, frequency of sunburn episodes, and levels of parental and peer support, using Chi-square tests, in SPSS 25.

Are sun protection behaviours and sunbed use organised into latent classes?

Analysis of schoolchildren aged 11–17 in Ireland

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Results

Figure 1. Latent classes in sun protection behaviours and sunbed use ($n = 10,248$)

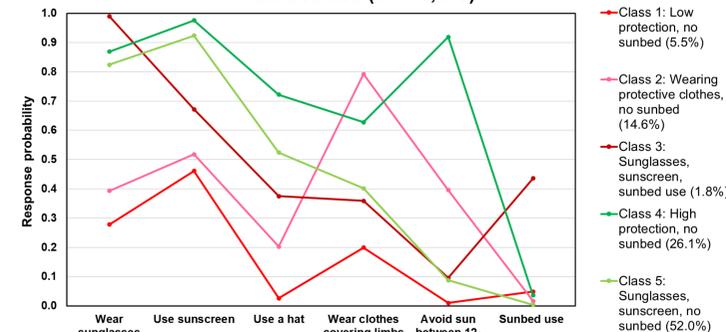


Figure 4. Family support across sun protection and sunbed use latent profiles ($n = 9750$)

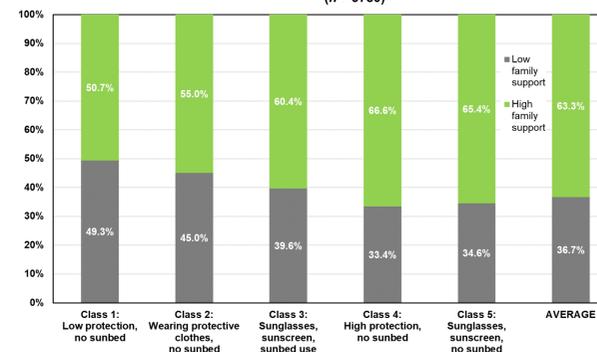


Figure 2. Frequency of sunburn episodes (last summer) across sun protection and sunbed use latent profiles ($n = 10,248$)

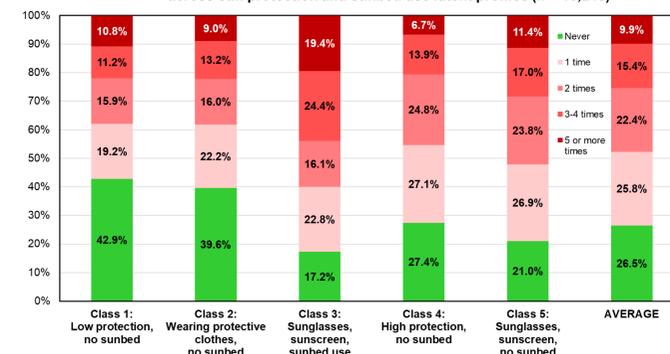


Figure 5. Peer support across sun protection and sunbed use latent profiles ($n = 9618$)

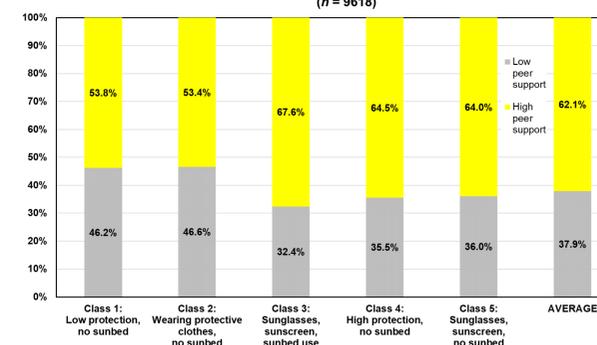
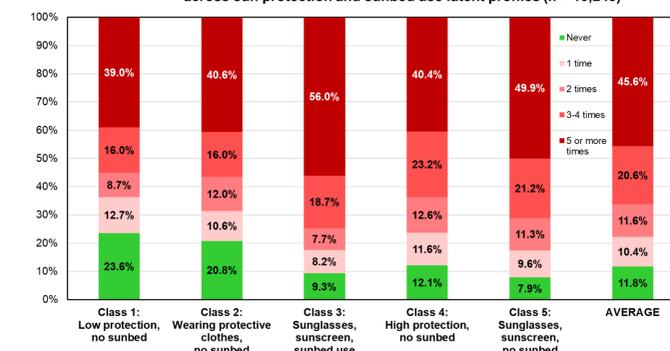


Figure 3. Frequency of sunburn episodes (lifetime) across sun protection and sunbed use latent profiles ($n = 10,248$)



The final model consisted of five latent classes (Figure 1). These differed in the frequency of different sun protection behaviours. Sunbed use was only present in Class 3. Class membership was significantly associated with sociodemographic factors: members in the class with sunbed use were more likely to be girls, older, and children from lower social classes (**not depicted**). Children in the **high protection classes (4, 5)** and also in the class with sunbed use were less likely to report sunburn last summer or lifetime than members of the **high risk classes (1, 2, 3)** (Figures 2, 3). Children in the high protection classes reported more parental support (Figure 4); they and members of the class with sunbed use reported more support from friends (Figure 5). The associations were significant ($p < .05$) but with low effect sizes ($V \leq .102$).

Discussion

We have found that there are separable clusters of sun and UV risk among Irish adolescents. Using a latent class analysis, we identified three high risk groups: (1) **generally no protection, no sunbed use**; (2) **wearing protective clothes but infrequently using other methods, no sunbed use**; (3) **using sunglasses and sunscreen but not the other methods and also using sunbeds**. Two high protection groups also were identified: (4) **generally high protection, no sunbed use**; and (5) **frequently using sunglasses and sunscreen, but not the other methods; no sunbed use**.

The risk groups (except Class 3) were more likely to report lifetime and last summer sunburn. Given that only a combination of multiple methods give protection against skin cancer, children and parents need targeted messages to use all of these, including covering the arms and legs, avoiding sun between 12-3PM, and wearing a hat. Girls, older children and those from lower social classes need special attention in UV related health promotion, as well as children who have low parental support. Effective protection also requires continued monitoring of children's UV-related behaviour in the context of Ireland's National Skin Cancer Prevention Plan 2019-2022.

Further information



[Overall report](#)



[Infographics](#)



[Methodological article](#)

