Giuliana Polo, Alessandro Feraldi - Mind the Gap: Parental Underestimation of Adolescent Difficulties and Its Association with Risk Behaviours

Previous research, theoretical background and hypothesis

Adolescence is a critical period of the life course characterized by rapid biological, psychological and social changes that shape long-term health and wellbeing trajectories. During this stage, individuals undergo profound transitions that offers opportunities for resilience-building and the development of coping strategies that contribute to wellbeing in adulthood. During adolescence, the emergence of multiple risk behaviours (such as smoking, anti-social behaviour, alcohol and other substance consumption and unprotected sexual intercourse) tends to occur, and it is linked to a higher likelihood of poor educational attainment, later-life morbidity and premature mortality (11, 3). Due to their high correlation with morbidity and mortality, there is an increased interest in studying risk behaviours in adolescents. The ways in which young people adopt and combine these behaviours during adolescence are crucial, as they often set trajectories that persist into adulthood and impose considerable personal and societal burdens. Individuals who exhibit one risk behaviour have the tendency to engage in others, implying the presence of shared biological and environmental factors that drive their emergence. This interconnection suggests that prevention and intervention strategies addressing one behaviour may simultaneously produce positive spillover effects on other related behaviours (8, 11).

A theoretical model that helps to understand human development is the Ecological Systems Theory by Bronfenbrenner, that argues that individual development is influenced by the entire ecological system in which growth occurs, suggesting that multiple levels of environmental factors, from family to societal attitudes, influence behavioural outcomes (4). A systematic review on factors associated with risk behaviours in adolescence, by Bozzini et al. (2020), highlighted the role of parents in influencing adolescents' risk behaviours. For example, parental style (overprotection) was associated with regular alcohol use in adolescence (3, 9, 12), while an authoritarian parental style was found to be a protective factor against binge drinking (13). The adolescent-parent relationship is associated with adolescent risk behaviours in both positive and negative ways, with adolescent disclosure emerging as an influential contributor to parental knowledge and the strongest negative predictor of adolescent risk behaviours (10). In a context where adolescent risk behaviours are central to both political and medical agendas, questions concerning the role of parenting in shaping these behaviours are crucial.

This study aims to contribute to the literature by deepening the understanding of a phenomenon that is well known in literature but not further treated as a trigger for adolescents' risk behaviours: the informant discrepancy in measuring adolescents' behaviour and wellbeing. It is well known in developmental literature that study consistently report discrepancies between informant (parents, teachers and self-report) (2, 1, 14). A theoretical model that summarises informant discrepancies is the Attribution Bias Context model, that argues that such discrepancies could be due to (i) differences in how individuals attribute the causes of children's behaviours, (ii) personal cognitive biases of each informant, and (iii) the specific situational context in which the informant provides their report (5). These discrepancies are examined in literature with the aim of better understanding how they arise and what factors lead parents to report their children's wellbeing differently from how their children report it themselves.

However, our research question examines how underestimation and overestimation of adolescents' difficulties may reflect limited parental knowledge, thereby contributing to the emergence and development of risky behaviours.

Among the multi-informant measures of children and adolescent's wellbeing, the Strengths and Difficulties Questionnaire (SDQ) is widely used. It assesses five domains in youth ages 3–17 years: emotional symptoms, peer problems, conduct problems, hyperactivity-inattention, and pro-social behaviour (7). Bergström (2021) found cross-informant concordance on the SDQ to be higher than for other measures, however, substantial informant discrepancies remain (2, 1). We use discrepancies in SDQ score to address

our research question, formulating three preliminary hypotheses: (i) when parents report lower SDQ scores compared to their children's self-reports, we expect a higher likelihood of risky attitudes; (ii) moderate overreporting by parents may act as a protective factor up to a certain threshold; and (iii) larger discrepancies between adolescent and parent reports are expected to be more strongly associated with the development of risk behaviours.

Data and methodology

Data are sourced from Sweep 7 of the Millennium Cohort Study (MCS), a longitudinal birth survey of children born in the United Kingdom between September 2000 and January 2002. The MCS is conducted by the Centre for Longitudinal Studies at the UCL Institute of Education. The study collects information on participants' social, economic, health, and developmental circumstances at multiple time points across childhood and adolescence. Sweep 7, conducted when cohort members were aged 17 years, includes self-reported measures of mental health and wellbeing, sociodemographic characteristics, and a wide range of family factors. The Sweep 7 survey is administered to 10,625 respondent families. The sample of the study comprises 7,265 individuals aged 17 years.

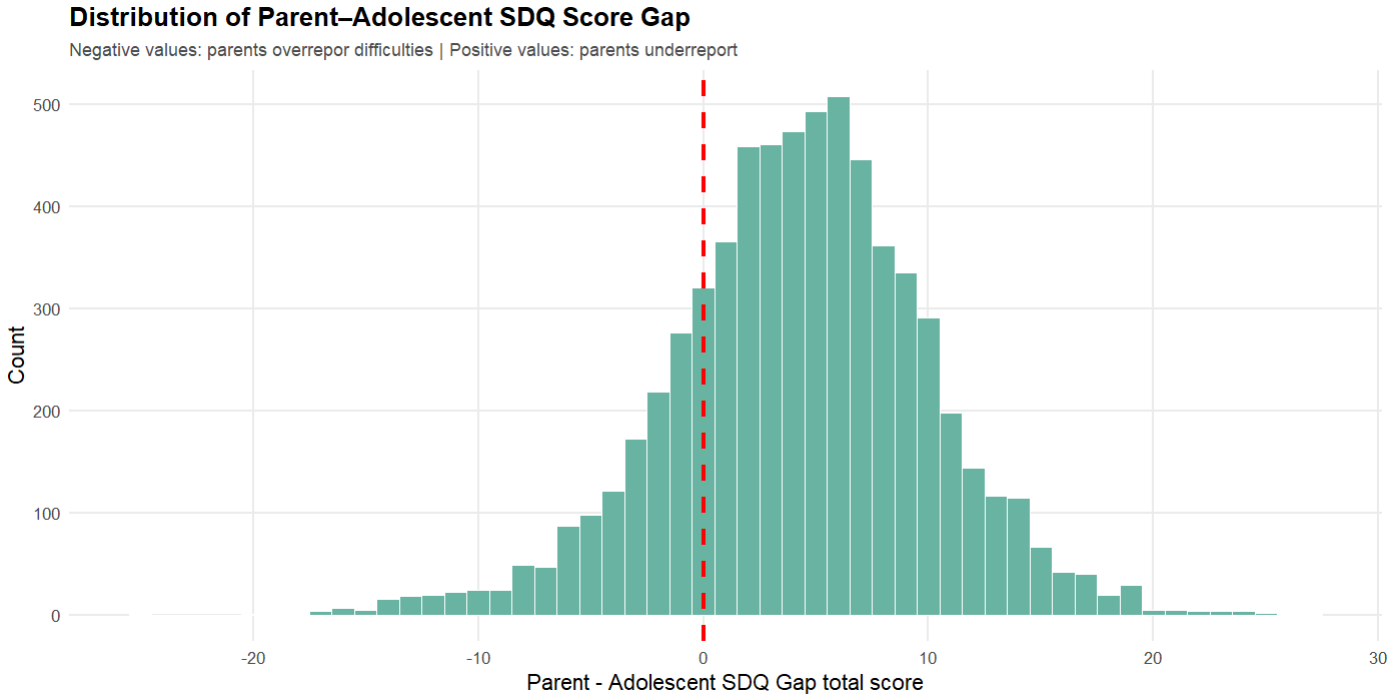
The main outcome variables in this study are adolescents' engagement in risky behaviours. These encompass six behaviours reported within the past 12 months: cigarette smoking, vaping, illegal drug use, alcohol consumption, antisocial and criminal behaviour, and unsafe sexual intercourse. Questions on alcohol consumption, smoking, and vaping habits were measured using frequency scales, while the remaining behaviours were assessed with binary responses. Frequency-based measures were categorised as follows: for alcohol use, we compared individuals who reported regular consumption with those who had never tried alcohol. Regular cigarette and vape users were defined as participants reporting current use and past regular smokers, whereas non-regular users included those with previous experimentation.

The independent variable in this study is the adolescent-parent informant discrepancy on the total difficulties scores of the SDQ, a 25-item screening tool for child mental health problems that can be completed by parents, teachers, or the children themselves (6, 7, 15). The SDQ comprises five subscales: peer problems, conduct problems, hyperactivity, emotional problems, and prosocial behaviour, each containing five items. A total difficulties score, which excludes the prosocial subscale to capture overall socioemotional behavioural problems, was calculated from both adolescent and parent report. Scores range from 0 to 40, with higher values reflecting greater Socioemotional and Behavioural Functioning difficulties. The discrepancy variable is constructed by evaluating the gap between adolescent-reported total difficulties score and parent-reported one (i.e., adolescent-reported SDQ minus parent-reported SDQ). The discrepancy variable varies from -40 to 40 with negative values indicating parent overreporting and 0 indicating a total coincidence among parents and children reports.

To examine the association between adolescent-parent discrepancies in SDQ total scores and engagement in risky behaviours, we employ multiple regression models. Binomial and multinomial logistic regression models are used for categorical outcomes, while linear models are applied to frequency-based outcomes. All models are adjusted for key socioeconomic and family covariates, ethnicity and behaviours of family and friends, to control for potential confounding factors. The discrepancy variables are treated both as a continuous measure and as a categorical variable distinguishing parent underreporting, overreporting, and agreement groups, allowing exploration of potential non-linear associations. We conduct sensitivity analyses using alternative cut-offs and interaction terms to test whether the relationship between discrepancies and risk behaviours differs by gender or socioeconomic background.

Descriptive findings

Figure 1: Distribution of SDQ Gap between adolescent and parent reports



The histogram in Figure 1 shows the distribution of the SDQ score gap between adolescent and parent reports, where positive values indicate that parents underreport their child's difficulties compared to the adolescent's self-report, and negative values indicate that parents overreport difficulties. The red dashed line marks perfect agreement between parent and adolescent SDQ scores. The asymmetry suggests that underreport is more prevalent, with more cases where parents underestimate difficulties, with a higher concentration between 2 and 7 points of gap. Extreme underreporting and extreme overreporting are rare.

Figure 2: Distribution of agreement and disagreement in parent-adolescent SDQ by risky behaviors

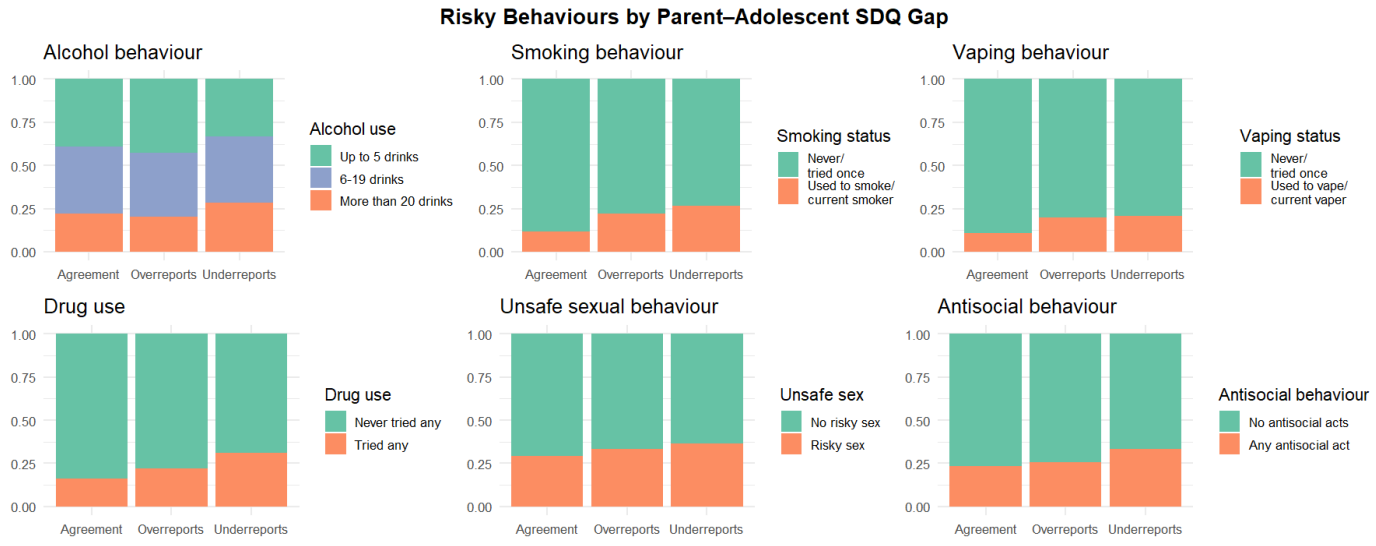


Figure 2 shows a stacked bar chart illustrating the distribution of risky behaviours among adolescents, divided according to the magnitude of the SDQ gap. As shown in the figure, a common pattern emerges across all risky behaviours. For each risky behaviour, adolescents with underreporting parents are more likely to report that behaviour. Adolescents with overreporting parents tend to exhibit fewer risky behaviours than those with underreporting parents but more than those whose parents are in agreement. This pattern does not totally hold for alcohol consumption, in this case, those with overreporting parents report slightly lower levels of alcohol use then those with parents in agreement.

Next Steps

In the next stage of the analysis, we will estimate the regression models and examine associations between discrepancies within each SDQ subscale (emotional symptoms, conduct problems, hyperactivity, peer problems) and each risk behaviour. This disaggregated approach helps identify which domains of adolescent functioning are most strongly linked to risk-taking patterns and whether parental under- or overestimation in certain areas serves as a protective or risk factor. By refining these models, we aim to contribute to the understanding of how parental awareness and perception of adolescent difficulties influence the development of risky behaviours and inform prevention strategies that strengthen parent-child communication and early identification of vulnerability.

References

1. Bergström M, Baviskar S. A systematic review of some reliability and validity issues regarding the strengths and difficulties questionnaire focusing on its use in out-of-home care. J Evid Based Soc Work. 2021;18(1):1–31.
2. Booth, C., Moreno-Agostino, D. & Fitzsimons, E. Parent-adolescent informant discrepancy on the Strengths and Difficulties Questionnaire in the UK Millennium Cohort Study. *Child Adolesc Psychiatry Ment Health* **17**, 57 (2023). https://doi.org/10.1186/s13034-023-00605-y
3. Bozzini, A. B., Bauer, A., Maruyama, J., Simões, R., & Matijasevich, A. (2020). Factors associated with risk behaviors in adolescence: a systematic review. *Brazilian Journal of Psychiatry*, *43*, 210-221.
4. Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Harvard university press.
5. De Los Reyes A, Kazdin AE. Informant discrepancies in the assessment of childhood psychopathology: a critical review, theoretical framework, and recommendations for further study. Psychol Bull. 2005;131(4):483.
6. Goodman, A., & Goodman, R. (2009). Strengths and difficulties questionnaire as a dimensional measure of child mental health. Journal of the American Academy of Child & Adolescent Psychiatry, 48(4), 400-403.
7. Goodman, R. (1997). The Strengths and Difficulties Questionnaire: a research note. Journal of child psychology and psychiatry, 38(5), 581 586.
8. Guilamo-Ramos, V., Litardo, H. A., & Jaccard, J. (2005). Prevention programs for reducing adolescent problem behaviors: Implications of the co-occurrence of problem behaviors in adolescence. *Journal of Adolescent Health*, *36*(1), 82-86.
9. Isohanni M, Oja H, Moilanen I, Koiranen M. Teenage alcohol drinking and non-standard family background. Soc Sci Med. 1994;38:1565-74.47. Fisher LB, Miles IW, Austin SB, Camargo CA Jr, Colditz GA. Predictors of initiation of alcohol use among US adolescents: findings from a prospective cohort study. Arch Pediatr Adolesc Med. 2007;161:959-66.
10. Kapetanovic, S., Skoog, T., Bohlin, M., Gerdner, A. (2019) Aspects of the parent–adolescent relationship and associations with adolescent risk behaviors over time Journal of family psychology, 33(1): 1-11 https://doi.org/10.1037/fam0000436
11. Kipping, R. R., Campbell, R. M., MacArthur, G. J., Gunnell, D. J., & Hickman, M. (2012). Multiple risk behaviour in adolescence. *Journal of Public Health*, *34*(suppl_1), i1-i2.
12. Livaudais JC, Napoles-Springer A, Stewart S, Kaplan CP. Understanding Latino adolescent risk behaviors: parental and peer influences. Ethn Dis. 2007;17:298-304.
13. McCann M, Perra O, McLaughlin A, McCartan C, Higgins K. Assessing elements of a family approach to reduce adolescent drinking frequency: parent-adolescent relationship, knowledge management and keeping secrets. Addiction. 2015;111:843-53.
14. Olino TM, Finsaas M, Dougherty LR, Klein DN. Is parent–child disagreement on child anxiety explained by differences in measurement properties? An examination of measurement invariance across informants and time. Front Psychol. 2018;9:1295.
15. Wickham, S., Whitehead, M., Taylor-Robinson, D., & Barr, B. (2017). The effect of a transition into poverty on child and maternal mental health: a longitudinal analysis of the UK Millennium Cohort Study. The Lancet Public Health, 2(3), e141-e148.