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To cite this article: Lucas Hertzog, Boladé Hamed Banougnin, Heidi Stöckl & Elona Toska (2022) Accelerating ontological security for South African adolescents living in high HIV-prevalence areas: a longitudinal study, *Psychology, Health & Medicine*, 27:sup1, 27-48, DOI: [10.1080/13548506.2022.2108079](https://doi.org/10.1080/13548506.2022.2108079)

To link to this article: <https://doi.org/10.1080/13548506.2022.2108079>



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Published online: 05 Aug 2022.



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Accelerating ontological security for South African adolescents living in high HIV-prevalence areas: a longitudinal study

Lucas Hertzog ^a, Boladé Hamed Banougnin ^a, Heidi Stöckl ^b and Elona Toska ^{a,c,d}

^aCentre for Social Science Research, University of Cape Town, Cape Town, South Africa; ^bInstitute of Medical Information Processing, Biometry and Epidemiology, Ludwig-Maximilians-University Munich, Munich, Germany; ^cDepartment of Social Policy and Intervention, Oxford University, Oxford, UK; ^dDepartment of Sociology, University of Cape Town, Cape Town, South Africa

ABSTRACT

Ontological security is the personal need to build fundamental certainty about the continuity of life events. It is central to long-term human development, particularly among adolescents in highly vulnerable communities in South Africa. We examined the cumulative effects of eight hypothesised provisions (development accelerators) in reducing the risks of ontological insecurity outcomes aligned with Sustainable Development Goals (SDGs) targets. Three waves of survey data from adolescents living in high HIV prevalence areas in South Africa were analysed. We used standardised tools to measure twelve outcomes linked to two dimensions of ontological security: mental health and violence. Sustained receipt (at baseline and follow-ups) of eight hypothesised accelerators were examined: emotional and social support, parental/caregiver monitoring, food sufficiency, accessible health care, government cash transfers to households, basic economic security, positive parenting/caregiving, and participation in extramural activities. Associations of all accelerators with outcomes were evaluated using multivariable regressions controlling for age, sex, orphanhood and HIV status, rural/urban location, and informal housing. Cumulative effects were tested using marginal effects modelling. Of 1,519 adolescents interviewed at baseline, 1,353 (89%) completed the interviews at two follow-ups. Mean age was 13.8 at baseline; 56.6% were female. Four provisions were associated with reductions in twelve outcomes. Combinations of accelerators resulted in a percentage reduction risk in individual indicators up to 18.3%. Emotional and social support, parental/caregiver monitoring, food sufficiency and accessible health care by themselves and in combination showed cumulative reductions across twelve outcomes. These results deepen an essential understanding of the long-term effects of consistent exposure to accelerators on multi-dimensional human development. They could be directly implemented by existing evidence-based interventions such as peer-based psychosocial support, parenting programmes, adolescent-responsive healthcare and food support, providing safer and healthier environments for South African adolescents to thrive.


ARTICLE HISTORY

Received 21 February 2022
Revised 18 May 2022
Accepted 25 July 2022

KEYWORDS

Ontological security; adolescents; mental health; prevention; violence; food security; psychosocial support; HIV; sub-Saharan africa

CONTACT Lucas Hertzog  lucas.hertzog@uct.ac.za  Centre for Social Science Research, University Avenue South, Cape Town, South Africa

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/13548506.2022.2108079>.

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Introduction

Adolescents in sub-Saharan Africa are at increased risks of violence exposure (Mathews et al., 2019) and poor mental health (Owen et al., 2016), posing significant threats to the human development of the world's fastest-growing population group (UNICEF, 2019). Violence and mental health are intrinsically linked, and urgent action in these two key areas is required to simultaneously provide safer and healthier environments for adolescents, ranging from 10 to 24 years (Sawyer et al., 2018). This has led to global commitments within the Sustainable Development Goals (SDGs) to promote mental health and well-being and respond to violence against vulnerable children and adolescents. To achieve that, countries in the region have to increase their efforts. Considering this need and the several gaps faced to reach SDGs, the United Nations Development Group (UNDG) has called for identifying 'accelerators': scalable and evidence-based practical actions and interventions at priority areas, targeting multiple SDGs at once (UNDP, 2017).

The interlinked nature of mental health issues and violence exposure has been widely identified across different settings (Pierre et al., 2020; Tol, 2020). However, little attention has been given to understanding them as components that inhibit the formulation of a fundamental existential security system (Giddens, 1984), elaborated since early childhood and consolidated during adolescence, and to the societal mechanisms that contribute to the consolidation of secure platforms for identity development and self-actualisation (Giddens, 1997; Laing, 1990). Structuration theory emphasises that social agents elaborate this security system through a psychic investment in reproducing ordered attributes of social life, suggesting that this investment responds to a need for ontological security, an existential drive to experience the societal world as relatively safe, reliable, predictable, and intelligible (Giddens, 1991).

Routinisation of positive social experiences, and programmatic actions that promote them, are crucial for mitigating ontological insecurity, a concept first used to describe the experiences of those with severe mental illness (Laing, 1990). In adolescence, the life stage in which routinisation shifts due to the combination of societal expectations and internal transformations, experiences of marginalisation due to poverty, violence, and trauma may lead to an abrupt and unhealthy transition into adulthood (Munson et al., 2013). In the context of the high burden of violence experienced by a high proportion of adolescents in sub-Saharan Africa (Hillis et al., 2016), the foundations of ordinarily organised everyday interactions that promote ontological security, a sense of well-being that gives a sense of continuity in one's life events, might be disturbed or severely weakened. In contexts of material scarcity and psychological adversity, adolescents face various risks when threats materialise into experiences of disrespect, violence and abuse with high costs to society (Hsiao et al., 2018).

Examining quantitative data through the lens of ontological security allows us to explore its two crucial dimensions in real life and identify the sustained interventions and social circumstances that can support adolescents in reaching their full potential. Particularly for examining samples with high levels of HIV infection, who face higher risks in various areas (Too et al., 2021), this theoretical framework supports understanding what may promote or hinder adolescents' opportunities to build a fundamental certainty about the continuity of life events.

The present study widens the scope of the existing approaches in accelerator research in two ways: firstly, it establishes linkages between the SDG targets and a theoretical framework that captures nuances of how to interpret these goals. To our knowledge, the current study makes the first attempt to measure two unexplored dimensions of ontological security (violence and mental health), aligning them with SDG targets. Second, most studies focusing on accelerators used cross-sectional data and longitudinal data up to two time points (Chipanta et al., 2022; Cluver et al., 2019; Haag et al., 2022; Mebrahtu et al., 2021; Meinck et al., 2021). The current study is one of the first accelerator research using data from three time points, which could pose essential understanding of the long-term effects of consistent exposure to accelerators, enhancing their potential to be considered protective factors (Rudgard et al., 2022). The study objectives were to 1) evaluate the association between eight hypothesised accelerators in reductions of two or more ontological insecurity outcomes aligned with SDG targets and 2) assess whether experiencing multiple accelerators might be linked to more significant reductions in risk factors for ontological insecurity.

Materials and methods

Participants and procedure

This analysis draws upon individual-level data from the Mzantsi Wakho longitudinal cohort, recruited in a health sub-district in the Eastern Cape province in South Africa. Adolescents ($n = 1,519$) aged 10–20 (56.9% female), 1080 of whom were adolescents living with HIV, were interviewed at baseline (2014–2015), follow-up (2015–2016) and second follow-up (2017–2018). This study catchment area is characterised as a resource-limited setting with high HIV-prevalence rates (Department of Health, 2012). The study had high acceptability with low refusal rates (<4% at both baseline and subsequent follow-ups). We used standardised interviews and extracted prospective data from clinical records. Sampling took place in clinic and community settings, including schools, adolescents' homes, home-based care organisations, and community-based sampling through youth programmes in villages or cities. We presented the research focus as general adolescent health and social needs to adolescents and their caregivers, and voluntary informed consent was provided by all participants 18 and over. When participants were under 18 years old, both caregiver and adolescent provided assent/consent. We co-designed the questionnaires relying on youth advisory processes (Cluver et al., 2021) and piloted them with adolescents from the study area. Interviewers with experience working with vulnerable youth were trained to discuss sensitive topics with adolescents. They conducted 60 to 90-min face-to-face interviews in a location chosen by participants to maximise confidentiality and safety. In light of the most recent data protection regulations, continuous research governance and data management practices are in place to protect adolescents' personal information throughout the data life-cycle (Hertzog et al., 2021). Ethical approvals for data collection were obtained from Universities of Oxford (SSD/2/3/IDREC and SSD/CUREC2/12-21) and Cape Town (HREC 389/2009 and CSSR 2013/04), and the relevant provincial South African Departments of Health, Basic Education, and Social

Development. Participants were given no financial incentives, but they all received a certificate, a small gift pack including soap and pencils, and refreshments, regardless of interview completion.

Measures

Ontological insecurity outcomes, hypothesised accelerators, and covariates

All measures of this study are summarised in [Table 1](#). We identified twelve outcomes aligned with two dimensions of ontological insecurity in the data, including six mental health and six violence measures. Since data collection was initiated before 2015, outcomes were retrospectively aligned with adolescent focused SDG targets. All outcomes were coded as binary indicators for analysis purposes. We also identified eight potential development accelerators. Hypothesised accelerators were measured as consistent exposure at baseline and subsequent follow-ups based on the literature suggesting that sustained and predictable access enhances their long-term potential to protect children and adolescents in vulnerable settings (Cluver et al., 2020; Haag et al., 2022; Meinck et al., 2021; Toska et al., 2020). The analyses controlled for six covariates, pre-selected for their potential to influence ontological security levels: age (in years), sex, orphanhood status (defined as being either maternally or paternally orphaned), HIV status (determined through clinical records (Haghighat et al., 2021)), urban/rural location, and informal housing (either living in a shack or the streets).

Analysis

Analyses were conducted in five steps using Stata 16.1, all stratified by sex. First, descriptive analyses (of frequencies and percentages for all hypothesised accelerators, SGD-aligned ontological insecurity outcomes and covariates) were conducted to compare participants who completed all three rounds of interviews with those who did not ([Table 2](#), [Supplement 1](#)). Second, nonzero spearman correlations between outcomes were computed ([Supplement 3](#)). Third, generalized estimating equations (GEE) models with an exchangeable correlation matrix were fitted to account for correlated observations within participants ([Table 3](#)). The GEE models contained a logit link and binomial family distribution to estimate odds ratios and 95% confidence intervals (CIs). Models of individual outcomes included hypothesised accelerators controlled for age, sex, orphanhood and HIV status, urban/rural location, and informal housing. Fourth, all predictors associated with reductions in at least two SDG-aligned ontological insecurity outcomes were considered accelerators. Finally, we calculated adjusted predicted probabilities (95% CIs), testing for possible cumulative effects between identified accelerators, using marginal effects models with each combination of accelerators, holding covariates at their observed values (Long & Mustillo, 2021; [Table 4](#)).

Table 1. SDG targets, hypothesised accelerators, definitions and scales used in this analysis.

Operationalised measure in this study	Measure	Instrument
SDGs 3.4: Promote mental health	Depression Symptoms Manifest anxiety Symptoms of depression (past 2 weeks) Symptoms of anxiety (past 1 month)	Child Depression Inventory (short form; Kovacs, 1992) Revised Children's Manifest Anxiety Scale (Boyes et al., 2013; Reynolds & Richmond, 1978)
3.5: Prevention of substance misuse	PTSD ADHD Negative future ideation Posttraumatic stress (past 1 month) Attention deficit hyperactivity disorder Negative thoughts about the future	Short-form Child PTSD Checklist (Amaya-Jackson et al., 1995) ADHD Scale (DuPaul et al., 1998) Self-reported (unlikely to have a good job, a house, afford food, clothing and shelter, to have good health, engage in happy relationships with a long-term partner, and have happy and healthy children)
16.1.3: Prevention of physical, psychological, and sexual violence	Substance misuse Sexual abuse Self-reported alcohol use without caregivers' knowledge/ consent and no drug use (past 3 months) Self-reported no sexual abuse, defined as any lifetime (at baseline) and past-year (at follow-ups) contact sexual abuse or forced sex	Child Behavior Checklist (Achenbach, 1992), Alcohol Use Disorders Identification Test (J. B. Saunders et al., 1993) Juvenile Victimization Questionnaire (Finkelhor et al., 2011)
16.2.1: End violence against children	Community violence Physical abuse Self-reported no past-year witnessing of shootings, stabbings, or being physically attacked in the community Self-reported physical abuse victimisation (past-year)	Child Exposure to Community Violence checklist (Martinez & Richters, 1993) UNICEF Measures for National-level Monitoring of Orphans and Vulnerable Children (Snider & Dawes, 2006) UNICEF Measures for National-level Monitoring of Orphans and Vulnerable Children (Ibid.)
16.1: Reduce all forms of violence and related deaths	Emotional abuse Domestic violence Self-reported emotional abuse victimisation (past-year) Self-reported experience of domestic violence or witnessing incidents where adults were shouting or hitting at each other violently in the household Self-reported involvement in perpetration of violent or acquisitive crime	Revised UNICEF Psychological Indicator (Ibid.) Child Behavior Checklist (Martinez & Richters, 1993) items for theft, assault, and added items for carrying weapons and gang involvement
Hypothesised accelerators Emotional and social support	Youth lawbreaking Self-reported receipt of emotional and social support when issues were faced	Medical Outcome Study Social Support Survey (Sherbourne & Stewart, 1991)
Parental/caregiver monitoring	Self-reported receipt of good monitoring on all items (always or mostly)	Alabama Parenting Questionnaire sub-scale with 9 items (Elgar et al., 2007)
Food sufficiency	Self-reported meals affordability for the entire week and having three meals a day	South African Social Attitudes Survey (one of the eight highest socially perceived necessity for children; Pillay et al., 2006)

(Continued)

Table 1. (Continued).

	Operationalised measure in this study	Measure	Instrument
Accessible health care		Self-reported access to health care services at no cost, at a walking distance (less than 30 minutes), and in safety	South African Social Attitudes Survey (Ibid.), and added items for safety and distance
Cash Grant		Self-reported receipt in the household of any form of government social cash grant	South African census items (child support, foster child, pension, disability, or care dependency)
Basic economic security		Self-reported access to eight basic necessities	South African Social Attitudes Survey (Ibid.)
Positive parenting/caregiving		Self-reported receipt of parental praise, positive reinforcement, and support	Alabama Parenting Questionnaire sub-scale (Frick, 1991)
Extramural activities		Self-reported involvement in one social or community activity after school	Self-reported participation in a sports team, youth centre, volunteering, youth or homework club, gospel choir, singing or arts group

SDG = Sustainable Development Goal. PTSD = posttraumatic stress disorder. ADHD = attention deficit hyperactivity disorder.

Table 2. Sociodemographic characteristics of the sample.

	T1			T2			T3					
	Boys, N = 587	Girls, N = 766	Total, N = 1,353	Sex difference, p-value	Boys, N = 587	Girls, N = 766	Total, N = 1,353	Sex difference, p-value	Boys, N = 587	Girls, N = 766	Total, N = 1,353	Sex difference, p-value
Adolescent												
Age Mean(SD)	13.18 (2.60)	14.28 (3.13)	13.80 (2.96)	<0.001	14.72 (2.66)	15.68 (3.12)	15.26 (2.97)	<0.001	15.89 (2.66)	16.87 (3.12)	16.44 (2.97)	<0.001
Orphanhood	320 (55)	384 (50)	704 (52)	0.120	334 (57)	398 (52)	732 (54)	0.071	383 (65)	457 (60)	840 (62)	0.036
Living with HIV	419 (71)	514 (67)	933 (69)	0.092	423 (72)	527 (69)	950 (70)	0.190	424 (72)	532 (69)	956 (71)	0.270
Rural location	149 (25)	223 (29)	372 (27)	0.130	137 (23)	208 (27)	345 (26)	0.110	135 (23)	202 (26)	337 (25)	0.150
Informal housing	90 (15)	151 (20)	241 (18)	0.038	59 (10)	118 (15)	177 (13)	0.004	56 (10)	115 (15)	171 (13)	0.003
Hypothesised accelerators for ontological security*												
Emotional and social support	405 (69)	525 (69)	930 (69)	0.890	292 (50)	444 (58)	736 (54)	0.002	230 (39)	386 (50)	616 (46)	0.000
Parental/caregiver monitoring	207 (35)	245 (32)	452 (33)	0.200	82 (14)	129 (17)	211 (16)	0.150	29 (5)	64 (8)	93 (7)	0.014
Food sufficiency	475 (81)	566 (74)	1,041 (77)	0.002	365 (62)	424 (55)	789 (58)	0.012	310 (53)	351 (46)	661 (49)	0.011
Accessible health care	383 (65)	445 (58)	828 (61)	0.007	308 (52)	347 (45)	655 (48)	0.009	308 (52)	347 (45)	655 (48)	0.009
Cash Grant	555 (95)	722 (94)	1,277 (94)	0.89	511 (87)	677 (88)	1,188 (88)	0.42	464 (79)	629 (82)	1,093 (81)	0.14
Basic economic security	211 (36)	235 (31)	446 (33)	0.041	40 (7)	61 (8)	101 (7)	0.430	19 (3)	16 (2)	35 (3)	0.190
Positive parenting/caregiving	246 (42)	322 (42)	568 (42)	0.960	100 (17)	118 (15)	218 (16)	0.420	36 (6)	52 (7)	88 (7)	0.630
Extramural activities	430 (73)	413 (54)	843 (62)	<0.001	337 (57)	244 (32)	581 (43)	<0.001	259 (44)	145 (19)	404 (30)	<0.001
Ontological insecurity outcomes												
Depression symptoms	86 (15)	144 (19)	230 (17)	0.044	47 (8)	77 (10)	124 (9)	0.200	34 (6)	77 (10)	111 (8)	0.005
Manifest anxiety	117 (20)	212 (28)	329 (24)	0.001	40 (7)	82 (11)	122 (9)	0.013	35 (6)	71 (9)	106 (8)	0.025
Posttraumatic stress disorder	158 (27)	287 (38)	445 (33)	0.000	122 (21)	197 (26)	319 (24)	0.034	64 (11)	163 (21)	227 (17)	<0.001
Attention deficit hyperactivity disorder	184 (31)	234 (31)	418 (31)	0.750	142 (24)	139 (18)	281 (21)	0.007	88 (15)	104 (14)	192 (14)	0.460
Negative future ideation	36 (6)	37 (5)	73 (5)	0.290	22 (4)	26 (3)	48 (4)	0.730	126 (21)	198 (26)	324 (24)	0.061
Sexual abuse	23 (4)	61 (8)	84 (6)	0.002	21 (4)	49 (6)	70 (5)	0.020	4 (1)	12 (2)	16 (1)	0.100
Physical abuse	28 (5)	35 (5)	63 (5)	0.860	159 (27)	200 (26)	359 (27)	0.690	78 (13)	128 (17)	206 (15)	0.082
Emotional abuse	159 (27)	237 (31)	396 (29)	0.120	173 (29)	210 (27)	383 (28)	0.410	69 (12)	132 (17)	201 (15)	0.005
Community violence	380 (65)	468 (61)	848 (63)	0.160	291 (50)	326 (43)	617 (46)	0.010	194 (33)	242 (32)	436 (32)	0.570
Domestic violence	77 (13)	108 (14)	185 (14)	0.600	65 (11)	99 (13)	164 (12)	0.300	34 (6)	68 (9)	102 (8)	0.033
Substance misuse	41 (7)	89 (12)	130 (10)	0.004	30 (5)	60 (8)	90 (7)	0.036	51 (9)	77 (11)	128 (10)	0.360
Youth lawbreaking	125 (21)	105 (14)	230 (17)	0.000	58 (10)	38 (5)	96 (7)	0.000	77 (13)	61 (8)	138 (10)	0.002

Data are Mean (SD) for continuous variables and n (%) for categorical variables.* Hypothesised protective factors were measured as consistent across T1 and T2, or T1, T2, and T3. For example, 405 boys experienced emotional and social support at T1, of whom 292 also experienced in T2, and 203 in T3. Abbreviation: SD, standard deviation. Pearson's chi-squared coefficients.

Results

Descriptive statistics

Of 1,353 adolescents who completed interviews at three time points 56.6% were female. Frequency distributions for sociodemographic characteristics, the prevalence of hypothesised accelerators, and SDG-aligned ontological insecurity outcomes are shown in [Table 2](#). Participants who did not complete interviews at all three time points ($n = 166$) were, on average older, more likely to live in urban areas, and less likely to have lost at least one parent ([Supplement 1](#)). They were also less likely to receive emotional and social support, parental monitoring and positive parenting, cash grants, access basic needs, and participate in extramural activities. No other group differences were found. Overall, missing data were low (less than 1% for all variables), with the higher number of missing data being for substance misuse across three time points ($n = 59$), which might be explained due to the sensitivity of the question concerning a behaviour considered deviant. Of the analytic sample with participants who completed interviews at all time points, the mean age was 13.8 years at baseline, 15.26 at first follow up, and 16.44 at second follow up. Correlations between hypothesised accelerators and between outcomes were weak ($r < 0.3$), suggesting no multicollinearity (Vatcheva & Lee, 2016; [Supplements 2 and 3](#)).

Associations between hypothesised accelerators and outcomes

We identified four accelerators associated with reductions in ontological insecurity outcomes aligned with SDG targets ([Table 3](#)). For the whole sample, including boys and girls, emotional and social support was associated with fewer symptoms of depression, manifest anxiety, attention deficit hyperactivity disorder, negative future ideation, sexual and emotional abuse, domestic violence, and substance misuse. Parental/caregiver monitoring was associated with fewer symptoms of manifest anxiety, PTSD, negative future ideation, physical and emotional abuse, experience of community violence, and substance misuse. Food sufficiency was associated with fewer symptoms of manifest anxiety and sexual abuse. Accessible health care was associated with less symptoms of depression and youth lawbreaking. Similar results were shown in the sample stratified by sex. However, food sufficiency was associated with a single outcome for girls (less symptoms of manifest anxiety) and accessible health care with a single outcome for boys (reductions in youth lawbreaking), thus not considered accelerators when stratification is taken into account. Cash grants were also associated with a single outcome for girls and boys (less sexual abuse). Other hypothesised accelerators (basic economic security, positive parenting/caregiving, and participation in extramural activities) have shown results in contradictory directions and were not proven to be accelerators ([Table 3](#)).

Predicted percentage probabilities of accelerating ontological security

Adjusted predicted percentage probabilities for experiences outcomes and different combinations of accelerators are shown in [Table 4](#), [Figures \(1,2\)](#). In the whole sample, accounting for girls and boys, accelerators with higher reductions were emotional and

Table 3. Summary of multivariable associations between accelerators and outcomes disaggregated by sex.

	Girls & Boys		Girls		Boys	
	AOR (95% CI)	p-Value	AOR (95% CI)	p-Value	AOR (95% CI)	p-Value
Depression symptoms						
Emotional and social support	0.46 (0.34–0.62)	<0.001	0.41 (0.29–0.59)	<0.001	0.58 (0.36–0.96)	0.033
Parental/caregiver monitoring	0.94 (0.56–1.57)	0.803	0.61 (0.30–1.25)	0.176	1.83 (0.86–3.90)	0.119
Food sufficiency	0.91 (0.67–1.22)	0.510	0.94 (0.64–1.38)	0.763	0.84 (0.52–1.35)	0.476
Accessible health care	0.73 (0.54–0.97)	0.031	0.72 (0.50–1.05)	0.087	0.65 (0.40–1.07)	0.089
Cash Grant	0.83 (0.58–1.17)	0.284	0.90 (0.56–1.44)	0.650	0.74 (0.44–1.25)	0.261
Basic economic security	0.57 (0.25–1.31)	0.187	0.30 (0.08–1.22)	0.092	1.07 (0.35–3.25)	0.908
Positive parenting/caregiving	0.92 (0.55–1.52)	0.733	0.75 (0.38–1.49)	0.412	1.03 (0.46–2.30)	0.951
Extramural activities	0.94 (0.68–1.31)	0.728	1.23 (0.80–1.88)	0.340	0.68 (0.42–1.10)	0.118
Manifest anxiety						
Emotional and social support	0.42 (0.30–0.57)	<0.001	0.45 (0.31–0.65)	<0.001	0.35 (0.20–0.63)	<0.001
Parental/caregiver monitoring	0.48 (0.24–0.94)	0.033	0.55 (0.25–1.20)	0.133	0.35 (0.08–1.53)	0.162
Food sufficiency	0.71 (0.53–0.96)	0.027	0.57 (0.39–0.83)	0.004	1.05 (0.63–1.76)	0.849
Accessible health care	0.80 (0.60–1.08)	0.149	0.78 (0.53–1.14)	0.201	0.76 (0.45–1.27)	0.290
Cash Grant	0.77 (0.54–1.10)	0.148	0.73 (0.45–1.16)	0.185	0.90 (0.49–1.62)	0.716
Basic economic security	1.74 (0.94–3.21)	0.077	0.74 (0.21–2.58)	0.638	3.25 (1.60–6.59)	0.001
Positive parenting/caregiving	1.59 (1.01–2.50)	0.046	1.07 (0.57–1.99)	0.835	2.59 (1.31–5.09)	0.006
Extramural activities	1.17 (0.83–1.65)	0.379	1.61 (1.03–2.50)	0.035	0.81 (0.47–1.38)	0.436
Posttraumatic stress disorder						
Emotional and social support	0.84 (0.69–1.03)	0.089	0.69 (0.54–0.89)	0.004	1.18 (0.86–1.62)	0.315
Parental/caregiver monitoring	0.51 (0.34–0.74)	0.001	0.65 (0.42–1.00)	0.052	0.26 (0.10–0.66)	0.005
Food sufficiency	1.15 (0.95–1.40)	0.153	0.96 (0.75–1.23)	0.732	1.58 (1.14–2.19)	0.007
Accessible health care	0.92 (0.76–1.12)	0.399	0.97 (0.75–1.24)	0.784	0.83 (0.61–1.14)	0.254
Cash Grant	1.02 (0.78–1.34)	0.880	0.91 (0.64–1.29)	0.585	1.16 (0.75–1.81)	0.506
Basic economic security	1.47 (0.96–2.25)	0.073	1.54 (0.89–2.66)	0.126	1.45 (0.75–2.80)	0.270
Positive parenting/caregiving	0.97 (0.70–1.33)	0.845	1.03 (0.69–1.55)	0.887	0.88 (0.52–1.51)	0.651
Extramural activities	0.94 (0.76–1.16)	0.562	0.97 (0.72–1.30)	0.847	0.88 (0.64–1.21)	0.434
Attention deficit hyperactivity disorder						
Emotional and social support	0.53 (0.43–0.65)	<0.001	0.45 (0.34–0.60)	<0.001	0.62 (0.45–0.85)	0.003
Parental/caregiver monitoring	1.34 (0.96–1.87)	0.087	1.24 (0.78–1.98)	0.367	1.44 (0.88–2.35)	0.148
Food sufficiency	1.09 (0.88–1.35)	0.426	1.40 (1.04–1.88)	0.027	0.85 (0.63–1.15)	0.296
Accessible health care	0.82 (0.67–1.01)	0.068	0.84 (0.63–1.13)	0.261	0.79 (0.58–1.08)	0.141
Cash Grant	1.00 (0.75–1.34)	0.974	1.17 (0.76–1.81)	0.477	0.82 (0.55–1.23)	0.344
Basic economic security	0.41 (0.22–0.78)	0.006	0.38 (0.16–0.92)	0.031	0.43 (0.16–1.12)	0.084
Positive parenting/caregiving	0.78 (0.54–1.12)	0.177	0.75 (0.44–1.27)	0.284	0.75 (0.44–1.28)	0.288
Extramural activities	1.03 (0.82–1.29)	0.794	1.19 (0.86–1.65)	0.284	0.89 (0.66–1.20)	0.455
Negative future ideation						
Emotional and social support	0.60 (0.48–0.75)	<0.001	0.79 (0.59–1.05)	0.108	0.36 (0.24–0.54)	<0.001
Parental/caregiver monitoring	0.66 (0.44–0.98)	0.042	0.84 (0.53–1.34)	0.473	0.33 (0.13–0.84)	0.021
Food sufficiency	0.99 (0.80–1.24)	0.964	1.04 (0.78–1.38)	0.808	0.90 (0.63–1.29)	0.562
Accessible health care	1.00 (0.80–1.24)	0.971	0.99 (0.75–1.31)	0.927	1.01 (0.70–1.46)	0.953
Cash Grant	1.20 (0.89–1.61)	0.239	1.33 (0.88–1.99)	0.176	1.12 (0.72–1.74)	0.617
Basic economic security	0.79 (0.45–1.40)	0.427	0.45 (0.18–1.11)	0.082	1.39 (0.64–3.00)	0.407
Positive parenting/caregiving	0.52 (0.33–0.81)	0.004	0.52 (0.30–0.91)	0.021	0.49 (0.23–1.03)	0.061
Extramural activities	0.66 (0.50–0.86)	0.002	0.69 (0.48–1.00)	0.052	0.63 (0.43–0.92)	0.017
Sexual abuse						
Emotional and social support	0.49 (0.35–0.69)	<0.001	0.45 (0.31–0.67)	<0.001	0.61 (0.34–1.11)	0.107
Parental/caregiver monitoring	0.82 (0.49–1.38)	0.456	0.76 (0.42–1.36)	0.352	0.87 (0.26–2.87)	0.816
Food sufficiency	0.69 (0.49–0.96)	0.028	0.67 (0.45–1.01)	0.055	0.72 (0.40–1.29)	0.272
Accessible health care	1.08 (0.76–1.54)	0.661	1.01 (0.67–1.53)	0.956	1.26 (0.65–2.45)	0.499
Cash Grant	0.44 (0.31–0.62)	<0.001	0.44 (0.29–0.69)	<0.001	0.46 (0.26–0.80)	0.007
Basic economic security	1.17 (0.60–2.30)	0.644	0.93 (0.38–2.26)	0.869	1.39 (0.39–4.97)	0.615
Positive parenting/caregiving	1.21 (0.72–2.03)	0.468	1.42 (0.76–2.63)	0.270	1.06 (0.47–2.38)	0.882
Extramural activities	1.02 (0.73–1.43)	0.888	0.85 (0.52–1.38)	0.506	1.42 (0.96–2.09)	0.080
Physical abuse						
Emotional and social support	0.87 (0.71–1.06)	0.166	0.85 (0.65–1.11)	0.237	0.85 (0.62–1.17)	0.329

(Continued)

Table 3. (Continued).

	Girls & Boys		Girls		Boys	
	AOR (95% CI)	p-Value	AOR (95% CI)	p-Value	AOR (95% CI)	p-Value
Parental/caregiver monitoring	0.57 (0.42–0.79)	0.001	0.57 (0.38–0.85)	0.006	0.61 (0.36–1.01)	0.056
Food sufficiency	1.09 (0.88–1.35)	0.429	1.02 (0.77–1.35)	0.909	1.18 (0.84–1.64)	0.334
Accessible health care	1.02 (0.83–1.24)	0.884	0.93 (0.71–1.22)	0.608	1.12 (0.81–1.54)	0.484
Cash Grant	1.07 (0.80–1.42)	0.643	0.96 (0.67–1.38)	0.817	1.25 (0.78–2.00)	0.356
Basic economic security	1.79 (1.20–2.67)	0.005	1.76 (1.06–2.93)	0.030	1.96 (1.02–3.75)	0.042
Positive parenting/caregiving	1.46 (1.11–1.93)	0.007	1.31 (0.90–1.90)	0.157	1.72 (1.12–2.65)	0.013
Extramural activities	1.33 (1.07–1.65)	0.011	1.18 (0.86–1.63)	0.300	1.57 (1.15–2.14)	0.005
Emotional abuse						
Emotional and social support	0.80 (0.65–0.98)	0.029	0.66 (0.51–0.85)	0.002	1.03 (0.75–1.42)	0.846
Parental/caregiver monitoring	0.45 (0.31–0.66)	<0.001	0.44 (0.26–0.73)	0.002	0.50 (0.29–0.87)	0.014
Food sufficiency	0.96 (0.78–1.18)	0.715	0.80 (0.61–1.06)	0.122	1.27 (0.92–1.74)	0.144
Accessible health care	0.90 (0.74–1.09)	0.281	0.85 (0.65–1.11)	0.227	0.94 (0.69–1.28)	0.678
Cash Grant	0.93 (0.73–1.19)	0.568	0.95 (0.69–1.30)	0.733	0.92 (0.62–1.37)	0.680
Basic economic security	1.70 (1.12–2.58)	0.014	1.56 (0.86–2.83)	0.146	1.87 (1.02–3.45)	0.044
Positive parenting/caregiving	1.77 (1.33–2.34)	<0.001	1.77 (1.20–2.59)	0.004	1.75 (1.14–2.69)	0.010
Extramural activities	1.31 (1.05–1.62)	0.015	1.31 (0.97–1.77)	0.082	1.36 (1.00–1.86)	0.053
Community violence						
Emotional and social support	0.91 (0.77–1.07)	0.252	0.81 (0.65–1.02)	0.074	1.12 (0.87–1.44)	0.394
Parental/caregiver monitoring	0.58 (0.44–0.77)	<0.001	0.70 (0.49–0.99)	0.043	0.42 (0.25–0.69)	0.001
Food sufficiency	1.00 (0.84–1.19)	0.971	0.86 (0.68–1.10)	0.231	1.15 (0.89–1.49)	0.293
Accessible health care	0.90 (0.76–1.07)	0.227	0.95 (0.76–1.20)	0.681	0.80 (0.63–1.03)	0.089
Cash Grant	1.25 (0.99–1.58)	0.065	1.29 (0.92–1.80)	0.135	1.21 (0.86–1.70)	0.272
Basic economic security	1.43 (0.97–2.10)	0.068	1.30 (0.78–2.17)	0.311	1.51 (0.83–2.75)	0.173
Positive parenting/caregiving	1.26 (0.97–1.65)	0.087	1.36 (0.95–1.94)	0.090	1.17 (0.78–1.76)	0.448
Extramural activities	1.45 (1.21–1.74)	<0.001	1.64 (1.26–2.12)	<0.001	1.28 (1.00–1.64)	0.048
Domestic violence						
Emotional and social support	0.60 (0.45–0.79)	<0.001	0.64 (0.45–0.90)	0.010	0.49 (0.30–0.78)	0.003
Parental/caregiver monitoring	0.81 (0.49–1.35)	0.425	0.86 (0.45–1.62)	0.639	0.78 (0.35–1.76)	0.558
Food sufficiency	0.81 (0.62–1.06)	0.130	0.88 (0.62–1.26)	0.498	0.74 (0.48–1.12)	0.157
Accessible health care	0.91 (0.69–1.19)	0.493	0.81 (0.57–1.15)	0.237	1.08 (0.70–1.66)	0.737
Cash Grant	1.35 (0.92–1.98)	0.127	1.61 (0.93–2.82)	0.091	1.08 (0.62–1.88)	0.782
Basic economic security	1.24 (0.65–2.40)	0.514	1.00 (0.37–2.74)	0.998	1.44 (0.60–3.44)	0.415
Positive parenting/caregiving	1.55 (1.02–2.35)	0.041	1.46 (0.82–2.61)	0.200	1.67 (0.89–3.14)	0.112
Extramural activities	1.14 (0.84–1.54)	0.414	1.10 (0.71–1.72)	0.667	1.25 (0.81–1.92)	0.311
Substance misuse						
Emotional and social support	0.71 (0.52–0.96)	0.029	0.71 (0.49–1.04)	0.083	0.66 (0.38–1.15)	0.141
Parental/caregiver monitoring	0.20 (0.07–0.60)	0.004	0.19 (0.05–0.72)	0.014	0.22 (0.03–1.54)	0.129
Food sufficiency	1.06 (0.78–1.43)	0.717	0.94 (0.63–1.39)	0.751	1.26 (0.79–2.03)	0.329
Accessible health care	0.85 (0.63–1.14)	0.272	0.83 (0.56–1.23)	0.349	0.80 (0.51–1.27)	0.347
Cash Grant	0.81 (0.57–1.16)	0.255	0.85 (0.54–1.33)	0.475	0.74 (0.42–1.32)	0.313
Basic economic security	0.49 (0.19–1.28)	0.148	0.71 (0.23–2.17)	0.550	0.33 (0.06–1.65)	0.176
Positive parenting/caregiving	1.11 (0.67–1.84)	0.689	1.24 (0.67–2.30)	0.502	0.89 (0.38–2.11)	0.793
Extramural activities	1.16 (0.83–1.62)	0.389	1.29 (0.81–2.06)	0.280	1.03 (0.63–1.68)	0.895
Youth lawbreaking						
Emotional and social support	0.90 (0.67–1.19)	0.446	0.66 (0.43–1.00)	0.049	1.17 (0.79–1.71)	0.432
Parental/caregiver monitoring	0.65 (0.38–1.13)	0.125	0.76 (0.36–1.60)	0.470	0.57 (0.26–1.27)	0.168
Food sufficiency	1.03 (0.77–1.37)	0.857	1.07 (0.69–1.66)	0.779	1.01 (0.69–1.48)	0.969
Accessible health care	0.67 (0.50–0.89)	0.005	0.79 (0.51–1.23)	0.296	0.57 (0.39–0.83)	0.003
Cash Grant	1.02 (0.70–1.48)	0.911	1.18 (0.66–2.12)	0.568	0.92 (0.55–1.52)	0.739
Basic economic security	1.20 (0.63–2.28)	0.580	0.69 (0.21–2.26)	0.539	1.60 (0.71–3.57)	0.255
Positive parenting/caregiving	0.76 (0.45–1.27)	0.292	0.70 (0.29–1.66)	0.419	0.78 (0.41–1.48)	0.446
Extramural activities	1.33 (0.98–1.81)	0.065	1.25 (0.75–2.09)	0.396	1.40 (0.95–2.06)	0.092

Abbreviations: AOR, adjusted odds ratio; CI, confidence interval.

Table 4. Adjusted predicted percentage probabilities for experiencing outcomes and no, one, two, three, and all accelerators, disaggregated by sex.

Girls & Boys	Percentage probability	Confidence interval	Difference in % probability compared to no accelerator
Depression symptoms (SDG 3.4)			
No accelerators	13.8	11.1–16.6	
Emotional and social support	6.9	5.0–8.9	6.9 (5.0–8.9)
Accessible health care	10.5	7.9–13.2	3.3 (0.7–6.0)
Accessible health care & Food Sufficiency	9.3	7.0–11.7	4.5 (2.2–6.8)
Emotional and social support & Accessible health care	5.2	3.5–6.8	8.7 (7.1–10.3)
Emotional and social support & Food Sufficiency	6.1	4.4–7.9	7.7 (6.0–9.5)
Emotional and social support & Parental/caregiver monitoring	6.5	3.1–9.8	7.4 (4.0–10.7)
Parental/caregiver monitoring, Food Sufficiency & Accessible health care	8.8	4.4–13.2	4.9 (0.5–9.3)
Emotional and social support, Food Sufficiency & Accessible health care	4.5	3.2–5.9	9.3 (8.0–10.7)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	4.8	2.2–7.4	9.0 (6.4–11.6)
Emotional and social support, Parental/caregiver monitoring, & Food Sufficiency	5.7	2.7–8.7	8.1 (5.1–11.1)
All accelerators	4.2	2.0–6.5	9.6 (7.4–11.8)
Manifest anxiety (SDG 3.4)			
No accelerators	14.3	11.4–17.2	
Emotional and social support	6.8	4.8–8.7	7.5 (5.5–9.5)
Parental/caregiver monitoring	7.7	2.9–12.6	6.6 (1.7–11.4)
Food Sufficiency	11.6	8.7–14.4	2.7 (–0.1–5.5)
Accessible health care & Food Sufficiency	9.5	7.0–12.0	4.8 (2.3–7.2)
Parental/caregiver monitoring & Accessible health care	6.3	2.2–10.4	8.0 (3.9–12.1)
Parental/caregiver monitoring & Food Sufficiency	6.2	2.1–10.2	8.1 (4.1–12.2)
Emotional and social support & Accessible health care	5.5	3.7–7.3	8.8 (7.0–10.6)
Emotional and social support & Food Sufficiency	5.4	3.7–7.0	8.9 (7.3–10.6)
Emotional and social support & Parental/caregiver monitoring	3.5	1.1–5.9	10.8 (8.4–13.2)
Parental/caregiver monitoring, Food Sufficiency & Accessible health care	5.0	1.7–8.3	9.3 (6.0–12.6)
Emotional and social support, Food Sufficiency & Accessible health care	4.4	3.0–5.7	9.9 (8.6–11.3)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	2.8	0.9–4.8	11.5 (9.5–13.4)
Emotional and social support, Parental/caregiver monitoring, & Food Sufficiency	2.7	0.9–4.6	11.5 (9.6–13.4)
All accelerators	2.2	0.7–3.7	12.1 (10.5–13.6)
Posttraumatic stress disorder (SDG 3.4)			
No accelerators	21.6	18.6–24.6	
Parental/caregiver monitoring	12.4	8.0–16.7	9.2 (4.9–13.6)
Parental/caregiver monitoring & Accessible health care	11.6	7.4–15.8	10.0 (5.8–14.2)
Emotional and social support & Parental/caregiver monitoring	10.6	6.8–14.5	11.0 (7.2–14.8)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	10.0	6.3–13.6	11.7 (8.0–15.3)
Attention deficit hyperactivity disorder (SDG 3.4)			
No accelerators	22.8	19.5–26.0	
Emotional and social support	13.4	10.8–15.9	9.4 (6.8–12.0)
Emotional and social support & Accessible health care	11.2	8.8–13.6	11.6 (9.2–14.0)
Negative future ideation (SDG 3.4)			
No accelerators	17.7	14.9–20.6	

(Continued)

Table 4. (Continued).

Girls & Boys	Percentage probability	Confidence interval	Difference in % probability compared to no accelerator
Emotional and social support	11.3	9.0–13.6	6.4 (4.1–8.8)
Parental/caregiver monitoring	12.2	7.5–16.9	5.5 (0.8–10.2)
Parental/caregiver monitoring & Food Sufficiency	11.5	7.0–16.0	6.2 (1.7–10.8)
Emotional and social support & Food Sufficiency	10.6	8.4–12.8	7.1 (4.9–9.3)
Emotional and social support & Parental/caregiver monitoring	7.6	4.5–10.7	10.1 (7.0–13.2)
Emotional and social support, Parental/caregiver monitoring, & Food Sufficiency	7.1	4.2–10.1	10.6 (7.6–13.6)
Sexual abuse (SDG 16.1.3)			
No accelerators	12.6	9.6–15.6	
Emotional and social support	6.8	4.6–9.0	5.8 (3.6–8.0)
Food Sufficiency	9.5	6.7–12.3	3.1 (0.3–5.9)
Emotional and social support & Food Sufficiency	5.0	3.2–6.8	7.6 (5.8–9.4)
Emotional and social support & Parental/caregiver monitoring	5.9	2.5–9.4	6.7 (3.2–10.1)
Emotional and social support, Parental/caregiver monitoring, & Food Sufficiency	4.4	1.8–7.0	8.2 (5.6–10.8)
Physical abuse (SDG 16.2.1)			
No accelerators	21.2	18.0–24.4	
Parental/caregiver monitoring	13.8	9.4–18.1	7.4 (3.1–11.8)
Emotional and social support & Parental/caregiver monitoring	12.4	8.4–16.4	8.8 (4.8–12.8)
Emotional abuse (SDG 16.2.1)			
No accelerators	24.8	21.5–28.2	
Emotional and social support	21.6	18.2–25.0	3.2 (–0.2–6.6)
Parental/caregiver monitoring	13.5	8.8–18.2	11.3 (6.6–16.0)
Parental/caregiver monitoring & Accessible health care	12.2	7.8–16.6	12.6 (8.2–17.0)
Emotional and social support & Parental/caregiver monitoring	11.5	7.4–15.6	13.3 (9.2–17.4)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	10.4	6.6–14.1	14.5 (10.7–18.2)
Community violence (SDG 16.1.3)			
No accelerators	41.9	38.1–45.6	
Parental/caregiver monitoring	30.1	23.8–36.5	11.7 (5.4–18.1)
Parental/caregiver monitoring & Accessible health care	27.6	21.5–33.8	14.2 (8.1–20.4)
Emotional and social support & Parental/caregiver monitoring	28.4	22.3–34.5	13.5 (7.4–19.6)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	26.0	20.1–31.8	15.9 (10.0–21.7)
Domestic violence (SDG 16.2.1)			
No accelerators	13.4	10.7–16.1	
Emotional and social support	9.0	6.7–11.2	4.4 (2.2–6.7)
Accessible health care & Food Sufficiency	10.6	8.1–13.1	2.8 (0.3–5.3)
Emotional and social support & Accessible health care	8.2	5.9–10.5	5.2 (2.9–7.5)
Emotional and social support & Food Sufficiency	7.7	5.6–9.7	5.7 (3.7–7.8)
Emotional and social support & Parental/caregiver monitoring	7.5	3.9–11.1	5.9 (2.3–9.5)
Parental/caregiver monitoring, Food Sufficiency & Accessible health care	8.9	4.7–13.1	4.5 (0.3–8.7)
Emotional and social support, Food Sufficiency & Accessible health care	7.0	5.2–8.8	6.4 (4.6–8.2)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	6.9	3.5–10.2	6.5 (3.2–9.9)
Emotional and social support, Parental/caregiver monitoring, & Food Sufficiency	6.4	3.3–9.5	7.0 (3.9–10.1)
All accelerators	5.8	3.1–8.6	7.6 (4.8–10.3)

(Continued)

Table 4. (Continued).

Girls & Boys	Percentage probability	Confidence interval	Difference in % probability compared to no accelerator
Substance misuse (SDG 3.5)			
No accelerators	12.4	10.1–14.8	
Emotional and social support	9.5	7.2–11.7	2.9 (0.7–5.2)
Parental/caregiver monitoring	3.0	–0.3–6.4	9.4 (6.1–12.7)
Emotional and social support & Parental/caregiver monitoring	2.2	–0.3–4.6	10.2 (7.8–12.7)
Youth lawbreaking (SDG 16.1)			
No accelerators	11.0	8.6–13.4	
Accessible health care	7.5	5.4–9.6	3.5 (1.4–5.6)
Parental/caregiver monitoring & Accessible health care	5.0	2.2–7.8	6.0 (3.2–8.8)
Emotional and social support & Accessible health care	6.5	4.6–8.5	4.5 (2.5–6.4)
Emotional and social support & Parental/caregiver monitoring	6.4	3.0–9.9	4.6 (1.1–8.0)
Emotional and social support, Parental/caregiver monitoring, & Accessible health care	4.3	1.9–6.7	6.7 (4.3–9.1)
Girls	Percentage probability	Confidence interval	Difference in % probability compared to no accelerator
Depression symptoms (SDG 3.4)			
No accelerators	17.2	13.1–21.4	
Emotional and social support	7.8	5.2–10.5	9.4 (6.7–12.1)
Emotional and social support & Parental/caregiver monitoring	4.8	1.3–8.4	12.4 (8.8–15.9)
Manifest anxiety (SDG 3.4)			
No accelerators	18.9	14.5–23.3	
Emotional and social support	9.6	6.5–12.7	9.3 (6.2–12.4)
Emotional and social support & Parental/caregiver monitoring	5.5	1.3–9.6	13.4 (9.3–17.6)
Posttraumatic stress disorder (SDG 3.4)			
No accelerators	28.2	23.7–32.7	
Emotional and social support	21.5	17.3–25.6	6.7 (2.6–10.9)
Parental/caregiver monitoring	20.6	13.0–28.1	7.6 (0.1–15.2)
Emotional and social support & Parental/caregiver monitoring	15.2	9.2–21.3	13.0 (6.9–19.0)
Attention deficit hyperactivity disorder (SDG 3.4)			
No accelerators	20.1	16.0–24.1	
Emotional and social support	10.1	7.4–12.9	9.9 (7.2–12.7)
Emotional and social support & Accessible health care	8.7	6.0–11.4	11.4 (8.7–14.0)
Negative future ideation (SDG 3.4)			
No accelerators	17.0	13.4–20.5	
Emotional and social support	13.7	10.5–17.0	3.3 (0.0–6.5)
Sexual abuse (SDG 5.2)			
No accelerators	17.1	12.5–21.6	
Emotional and social support	8.9	5.7–12.1	8.2 (5.0–11.4)
Emotional and social support & Parental/caregiver monitoring	7.2	2.3–12.2	9.8 (4.9–14.8)
Physical abuse (SDG 16.2.1)			
No accelerators	23.6	19.2–27.9	
Parental/caregiver monitoring	15.2	9.2–21.1	8.4 (2.4–14.4)
Emotional and social support & Parental/caregiver monitoring	13.4	8.0–18.8	10.1 (4.7–15.5)
Emotional abuse (SDG 16.2.1)			
No accelerators	30.0	25.3–34.8	
Emotional and social support	23.0	18.6–27.5	7.0 (2.6–11.5)
Parental/caregiver monitoring	16.3	9.3–23.3	13.7 (6.7–20.7)
Emotional and social support & Parental/caregiver monitoring	11.9	6.5–17.4	18.1 (12.7–23.5)

(Continued)

Table 4. (Continued).

Girls & Boys	Percentage probability	Confidence interval	Difference in % probability compared to no accelerator
Community violence (SDG 16.1.3)			
No accelerators	42.0	37.0–47.0	
Emotional and social support & Parental/caregiver monitoring	30.1	22.2–38.0	11.9 (4.1–19.8)
Domestic violence (SDG 16.2.1)			
No accelerators	14.7	10.9–18.5	
Emotional and social support	10.5	7.3–13.6	4.2 (1.1–7.4)
Emotional and social support & Parental/caregiver monitoring	9.1	3.8–14.3	5.6 (0.4–10.9)
Substance misuse (SDG 3.5)			
No accelerators	14.8	11.3–18.3	
Emotional and social support	11.5	8.3–14.7	3.3 (0.1–6.5)
Emotional and social support & Parental/caregiver monitoring	2.7	–0.9–6.2	12.1 (8.6–15.7)
Youth lawbreaking (SDG 16.1)			
No accelerators	8.7	5.8–11.6	
Emotional and social support	5.7	3.4–8.0	3.0 (0.7–5.2)
Emotional and social support & Parental/caregiver monitoring	4.3	0.9–7.7	4.3 (0.9–7.7)
Boys	Percentage probability	Confidence interval	Difference in % probability compared to no accelerator
Depression symptoms (SDG 3.4)			
No accelerators	9.9	6.4–13.4	
Emotional and social support	6.1	3.1–9.1	3.8 (0.8–6.8)
Manifest anxiety (SDG 3.4)			
No accelerators	8.3	4.9–11.7	
Emotional and social support	3.4	1.3–5.6	4.8 (2.7–7.0)
Posttraumatic stress disorder (SDG 3.4)			
No accelerators	13.4	9.8–17.0	
Parental/caregiver monitoring	3.8	0.4–7.1	9.6 (6.3–13.0)
Attention deficit hyperactivity disorder (SDG 3.4)			
No accelerators	26.6	21.4–31.8	
Emotional and social support	17.9	13.0–22.7	8.7 (3.8–13.6)
Negative future ideation (SDG 3.4)			
No accelerators	18.8	13.9–23.6	
Emotional and social support	7.6	4.5–10.7	11.1 (8.1–14.2)
Parental/caregiver monitoring	6.6	0.4–12.8	12.2 (5.9–18.4)
Sexual abuse (SDG 16.1.3)			
No accelerators	7.0	3.5–10.4	
Emotional and social support	4.1	1.3–6.9	2.8 (0.0–5.7)
Physical abuse (SDG 16.2.1)			
No accelerators	18.6	14.0–23.3	
Emotional and social support & Parental/caregiver monitoring	11.7	5.5–17.8	7.0 (0.8–13.1)
Emotional abuse (SDG 16.2.1)			
No accelerators	18.4	13.9–23.0	
Parental/caregiver monitoring	10.9	4.6–17.3	7.5 (1.1–13.9)
Community violence (SDG 16.1.3)			
No accelerators	42.1	36.4–47.8	
Parental/caregiver monitoring	23.7	14.5–33.0	18.3 (9.1–27.6)
Domestic violence (SDG 16.2.1)			
No accelerators	11.7	7.7–15.7	
Emotional and social support	6.3	3.4–9.3	5.3 (2.4–8.3)
Emotional and social support & Parental/caregiver monitoring	5.3	0.9–9.8	6.4 (1.9–10.8)

social support and parental monitoring, impacting eight and seven outcomes, respectively. Accessible health care and food sufficiency were associated with reductions in two outcomes each.

The most impactful reduction associated with receipt of emotional and social support was in the predicted probability of adolescents showing symptoms of ADHD. The probability was 22.8% (95% CI 19.5–26.0) with no accelerators. When the accelerator was present, this reduced to 13.4% (95% CI 10.8–15.9), a percentage-point reduction of 9.4 (6.8–12.0).

Parental monitoring was associated with substantial reductions across seven outcomes, with higher impacts in reducing the predicted probability in two violence outcomes (Table 4). The higher reduction associated with accessible health care was in the predicted probability of adolescents' involvement in youth lawbreaking. Food security has shown to be associated with higher reductions in sexual abuse (Table 4 and Figure 1).

When acting in synergy, accelerators were associated with higher reductions. Seven out of the twelve impacted outcomes showed reductions above ten percentage points, and different combinations of accelerators showed higher impacts than a single accelerator present (Figure 2). This pattern is observed across the twelve examined outcomes. For example, the additive effects of combining emotional and social support, parental monitoring, and accessible health care were associated with substantial reductions of 15.9% (95% CI 10.0–21.7) in exposure to community violence, 14.5% (95% CI 10.7–18.2) in experiencing emotional abuse, and a reduction of 11.7 percentage points (95% CI 8.0–15.3) in symptoms of PTSD.

Examining the sample stratified by sex, the most impacted outcome for adolescent girls was emotional abuse, associated with reductions of 18.1% (95% CI 12.7–23.5) when they received good levels of parental monitoring and emotional and social support. For boys, parental monitoring alone was associated with a reduction from 42.1% (95% CI 36.4–47.8) in experiencing community violence to 23.7% (95% CI 14.5–33.0), a reduction of 18.3% (95% CI 9.1–27.6), the higher found for an individual outcome in this study.

Discussion

Our study's results support evidence that specific accelerators may stimulate a state of ontological security for adolescents. The identified accelerators could be translated into targeted interventions to alleviate the associated risks and intersecting vulnerabilities faced in the everyday experiences of adolescents living with HIV. We identified four accelerators for reducing the risks of ontological insecurity amongst a group of vulnerable adolescents in South Africa: emotional and social support, parental/caregiver monitoring, accessible health care, and food sufficiency. The first two have shown to be associated with higher reductions in outcomes. Additionally, we found evidence of synergistic effects when accelerators were combined, in line with other studies' results using the accelerator approach (Cluver et al., 2019; Haag et al., 2022; Meinck et al., 2021). This indicates that combining accelerators may result in additional benefits for adolescents. Combined interventions may support them in consolidating a basic existential security system, responding to the need to elaborate a basic sense of certainty about the continuity of life events threatened by poor mental health and exposure to violence.

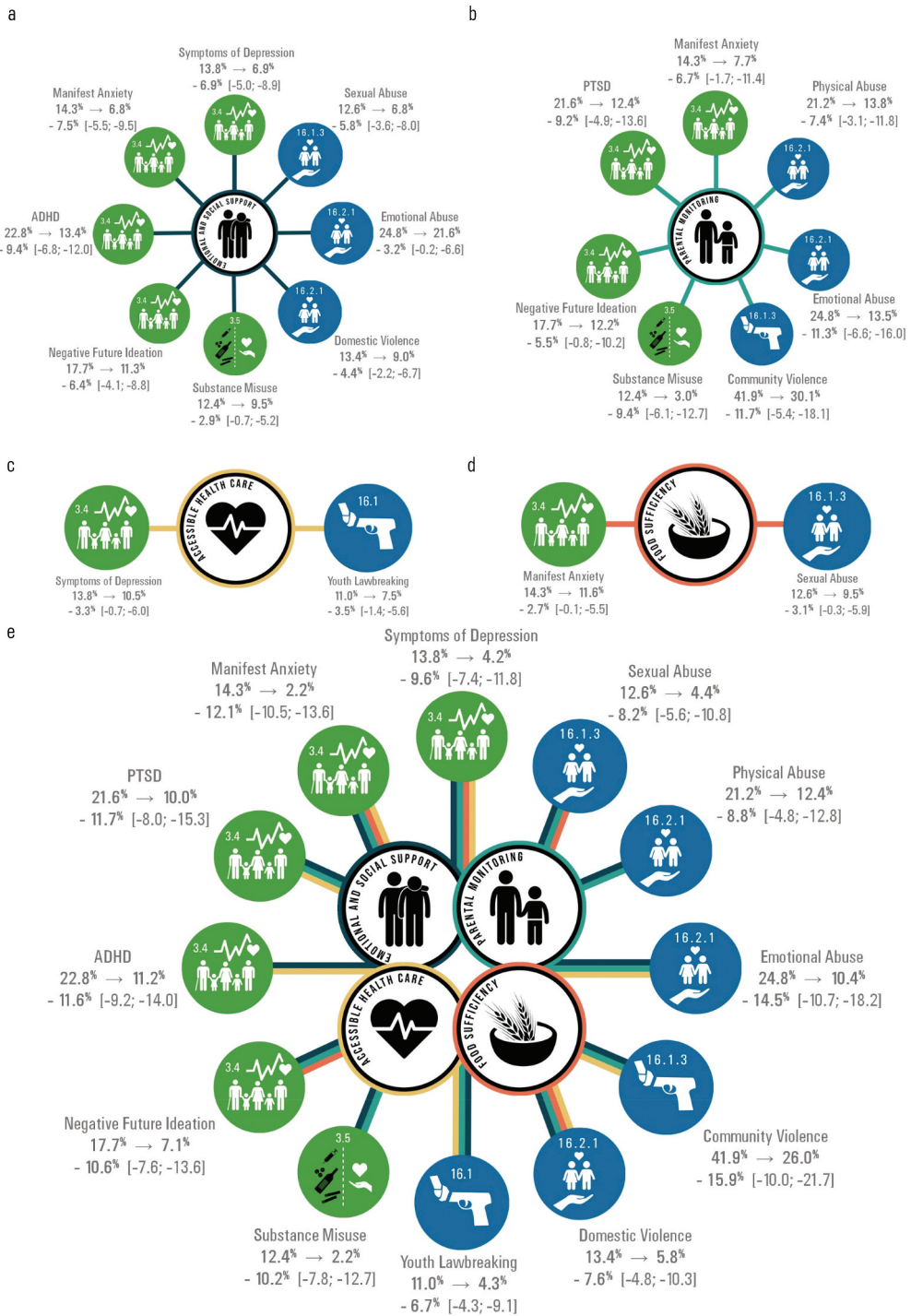


Figure 1. Accelerators modelled effects and synergy effects of all four accelerators. Note: The accelerators identified are emotional and social support (A), parental monitoring (B), accessible health care (C), and food sufficiency (D); the modelled synergistic effects between all four accelerators are shown in part E. In Part E, double lines indicate a synergy effect of two accelerators, triple lines indicate a synergy effect of three accelerators, and quadruple lines indicate a synergy effect of all four accelerators (lines are colour-coded representing the accelerator directionality for specific outcomes). Data are percentage-point reductions (95% CIs) in probabilities of achieving the SDG-aligned targets compared with no intervention.

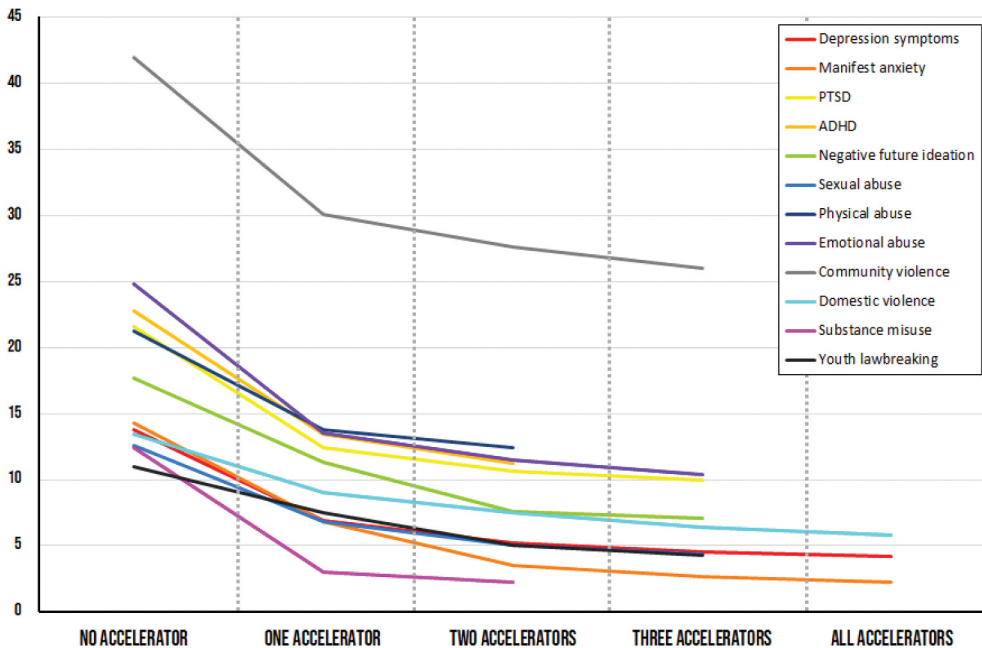


Figure 2. Additive effects of accelerators on selected outcomes. Note: Predicted probability in percentage point reductions of one, two, three, and all four accelerators compared to no accelerators. Predicted percentage probabilities were estimated when the accelerator had a significant association with the selected outcome (p value $< .05$), which leaves to some outcomes having two or three accelerators instead of all four.

This study is subject to several limitations. First is related to the challenges of quantifying ontological security (Saunders, 1989). The inherent subjectivity of the concept opens multiple avenues for interpretation of the risks associated with day-to-day life. Despite the inherent difficulties in operationalising the concept, our study avoids the pitfalls of bridging theoretical constructs with factual data by focusing on two specific dimensions of ontological security, stimulated by other studies that used a similar approach in different empirical settings (Haney & Gray-Scholz, 2020; Padgett, 2007). Second, we tested associations between accelerators and outcomes using quasi-experimental analysis, which calls for future tests in randomised experiments. The accelerators identified were not interventions but social circumstances and conditions encountered and measured in real life. The reductions in outcomes identified in our study cannot be explained as caused by accelerators. However, we hypothesised accelerators that potentially address frailties in adolescents' lives and could be directly implemented by interventions such as promoting psychosocial support groups, parenting programmes, targeted health investments and food programmes. Third, our sample is not representative of South Africa. However, our study has in-sample variation concerning access to accelerators, SDG outcomes, and sociodemographic characteristics. Fourth, we used self-reported measures in the study, leading to potential bias. However, we used validated and

piloted measures previously used in similar settings, aside from having an experienced data collection team trained to explain the purposes of the research project and encourage disclosure.

Despite such limitations, our study expands on existing evidence from South Africa, identifying accelerators that could narrow the gap between the constraints in adolescents' lives and the commitments made by the 2030 agenda (Cluver et al., 2019, 2020; Meinck et al., 2021). First, we identified that adolescents who receive emotional and social support and good parental monitoring are less exposed to violence and mental health issues. This is in line with a growing body of evidence that demonstrates the importance of psychosocial support and parenting programmes in child and adolescent development in sub-Saharan Africa, promoting mental health and violence prevention (Cluver et al., 2018, 2020). Second, this study identified accelerators' synergistic effects when they acted in combination. For example, accessible health care was associated with reductions in youth lawbreaking and symptoms of depression, and food sufficiency was associated with reductions in sexual abuse and manifest anxiety. However, combination with other accelerators showed substantial reductions across twelve outcomes (Figure 1). That evidence supports that adolescents will only reach their full potential if there is enough food on their plates, if they receive good parental monitoring, can access health services, and live in a supportive environment surrounded by peers and adults who pay attention to their problems and recognise them as valuable subjects, leading to individual self-realisation in safer environments.

In a resource-limited setting such as the one from our study, prioritising investments in key programme areas is crucial to increase the likelihood of converting adolescents' potentiality into a demographic dividend estimated at US\$500 billion per year in sub-Saharan Africa (UNFPA, 2014). This dividend relies on countries to make the right investments in adolescent human capital and adopt policies that aim to expand their opportunities.

Our study sheds light on four accelerators that had significant impacts on promoting adolescents' ontological security, which may, in turn, enable them to elaborate positive self-identities and promote the development of their capacities. The most promising accelerator identified in our study was emotional and social support. It showed significant improvements in the two ontological security dimensions examined. As shown in Figure 2, the higher impacts in adolescent outcomes occur when one accelerator is present compared to no accelerators, followed by a combination of two, three, and four accelerators that demonstrate further reductions in selected outcomes. Our study builds upon the existing evidence about psychosocial support's positive influence on adolescents. This can be achieved by promoting interventions such as community-based organisations and parenting programmes (Cluver et al., 2018; Sherr et al., 2020), which stimulates further research to estimate the costs of promoting these interventions.

Acknowledgments

We thank all adolescents who participated in this study and the fieldwork teams who collected data. Acknowledgements to Prof Mark Orkin, Dr William Rudgard, and Dr Mia Saminathen for furthering methodological discussions around accelerator analyses. We thank Prof Lorraine Sherr, Dr Katharina Haag, and the Child Community Care team for inspiring the concept used in our illustrations. We also thank all members of the Accelerate Hub for their support and meaningful interactions.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The Mzantsi Wakho study was funded by: the through the CIPHER grant (155-Hod; 2018/625-TOS); [F08 559/C]; Evidence for HIV Prevention in Southern Africa (EHPSA), a UK aid programme managed by Mott MacDonald; Janssen Pharmaceutica N.V., part of the Janssen Pharmaceutical Companies of Johnson & Johnson; the, but the views expressed are those of the authors and not necessarily the Foundation; Oak Foundation [R46194/AA001]; Oxford University Clarendon-Green Templeton College Scholarship; the Regional Inter-Agency Task Team for Children Affected by AIDS - Eastern and Southern Africa (RIATT-ESA); the John Fell Fund [John Fell Fund, University of Oxford 161/033]; the Leverhulme Trust [The Leverhulme Trust PLP-2014-095]; the University of Oxford's ESRC Impact Acceleration Account. [1602-KEA-189; K1311-KEA-004]; UNICEF Eastern and Southern Africa Office (UNICEF-ESARO); UKRI GCRF Accelerating Achievement for Africa's Adolescents (Accelerate) Hub (Grant Ref: Global Challenges Research Fund ES/S008101/1); Oak Foundation/GCRF 'Accelerating Violence Prevention in Africa' [OFIL-20-057]; and the National Institutes of Health under Award Number K43TW01143; International AIDS Society</#funding-source; Claude Leon Foundation</#funding-source; Nuffield Foundation

ORCID

Lucas Hertzog  <http://orcid.org/0000-0001-9881-3648>

Boladé Hamed Banounin  <http://orcid.org/0000-0001-5439-316X>

Heidi Stöckl  <http://orcid.org/0000-0002-0907-8483>

Elona Toska  <http://orcid.org/0000-0002-3800-3173>

Author contributions

LH conceptualised the paper and wrote the manuscript. LH, BHB, HS, and ET conceptualised the analyses. LH conducted the analyses, and BHB, HS, and ET provided feedback on the analyses. All authors have reviewed and approved the final manuscript.

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