


RESEARCH ARTICLE

Decline in positive future orientations among adolescents during covid-19: The role of socioeconomic status, parental support, and sense of control

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Abstract

Introduction: Before coronavirus disease (covid-19), adolescents from a lower socioeconomic status (SES) background tend to have less positive future orientations, receive less parental support, and have a weaker sense of control than adolescents from a higher SES background. The covid-19 pandemic has potentially increased the socioeconomic gaps in positive future orientations, parental support, and sense of control among adolescents who are currently in vocational education. As societies are aiming to return back to precovid norms, certain groups of adolescents might require more attention for ensuring a stable future than others.

Methods: Two-wave questionnaire data of 689 Dutch adolescents ($M_{\text{age}} = 17.8$; 56% female) from the Youth Got Talent project was analyzed. Latent Change Score models are a relatively novel approach that allows two-wave data to estimate associations between precovid predictor variables and changes in outcome variables from before to during covid-19 (e.g., SES, positive future orientations, parental support, and sense of control). Analyses were preregistered.

Results: The precovid socioeconomic differences in adolescent's positive future orientations and sense of control remained stable during covid-19, whereas the socioeconomic difference in parental support decreased during covid-19. A decline in parental support, an increase in sense of control, and more covid-19 hardships were associated with an increase in future orientations.

Conclusion: The covid-19 situation has not substantially increased socioeconomic differences in positive future orientations and sense of control, but did decrease socioeconomic differences in parental support among adolescents. Short-term policies should aim to facilitate parental support and positive future orientations to all adolescents who experienced a decline, while also long-term focusing on the more consistent socioeconomic difference in sense of control among adolescents.

KEYWORDS

adolescent development: achievement, aspirations, gender, mental health; behavior change; coping and resilience: adaptation, adjustment, and resilience; ethnic minorities

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1 | INTRODUCTION

At the early stages of the coronavirus disease (covid-19) pandemic, initial economic predictions for the nearby future of the Netherlands and other Western countries indicated a potential shortage of jobs, a tight housing market, and fewer social securities overall; all of which are expected to hit young vocational workers first and foremost (CPB, 2020a; OECD, 2020). As such, the covid-19 pandemic can potentially delay or obstruct the realization of future orientations (such as a stable job or family planning) for this generation of adolescents currently in vocational education tracks. Future orientations reflect the expectations, aspirations, and behavioral plans that adolescents have regarding their future, for example, in terms of career, family planning, but also about the self and society (Seginer, 2003). Having positive future orientations helps adolescents to display more goal-directed behavior (Johnson et al., 2014), less risk behavior (Steinberg, 2008), and in the long term positively predicts educational attainment (Beal & Crockett, 2010) and occupational prestige (Dubow et al., 2009). Having positive future orientations can therefore help adolescents to realize future goals, and transition successfully into adulthood.

In this study, we assessed if adolescents' future orientations were less positive during the covid-19 pandemic than before; and if this potential decline in future orientations is greater for adolescents from a lower compared to a higher socioeconomic status (SES). Furthermore, we assessed the extent to which adolescents' parental support, sense of control, and covid-19 related hardships can explain the relation between SES and changes in future orientations.

1.1 | Socioeconomic differences in future orientations before covid-19

The socioeconomic background of adolescents is an important factor that shapes the psychosocial developmental context (Bourdieu, 1984; Howard et al., 2011). It reflects access to resources, information, and social connections, as well as power and prestige (Hoff et al., 2002; Oakes & Rossi, 2003). For example, parents with a higher SES background are more likely to have a permanent job, a stable and comfortable income, and be homeowners. In contrast, parents with a lower SES background are more likely to be on a temporary employment contract, with (a below) average income that might fluctuate, and be house tenants (Desmond & Gershenson, 2016). In a low-SES context, adolescents and their families are more likely to experience economic hardships, unpredictability, instability, and higher levels of family stress (Conger & Donnellan, 2007).

Such characteristics of a low-SES environment affect individuals' psychological outlook on life, with a predominant focus on resolving immediate threats, handling current demands, and less attention to long-term planning—also known as “contextualism” (Kraus et al., 2012). In contrast, a high-SES context tends to be characterized by financial affluence, predictability, stability, and relatively low levels of family stress (Conger & Donnellan, 2007). Such characteristics of a high-SES context foster a psychological outlook in individuals that revolves around long-term personal goals and development—or “solipsism” (Kraus et al., 2012). Adolescents with a higher SES background are psychologically inclined to think about the future more often, in more detail, and with more optimism (Eshelman & Rottinghaus, 2015), whereas adolescents with a lower SES background facing precarity are more likely to restrain their time perspective to the present and leave out the future (Fieulaine & Apostolidis, 2015). Previous studies indeed suggest that adolescents from a higher SES background had a more positive future outlook (Nurmi, 1991), more future educational aspirations (Kao & Tienda, 1998), more future occupational aspirations (Howard et al., 2011), and less fatalistic future orientations (Guthrie et al., 2009) than adolescents from a lower SES background. Furthermore, parents with a higher SES themselves have more positive future orientations (Guthrie et al., 2009), and encourage their adolescents to hold similar positive future orientations (Kerpelman & Mosher, 2004). Family SES is therefore an important factor in developing positive future orientations during adolescence.

Previous studies suggest that the positive relationship between SES and adolescent's future orientations can in part be explained by experiences of parental support and sense of control. Adolescents from low-SES families tend to receive less parental support than those from high-SES families (Goosby, 2007). According to the *family stress model* (Conger & Donnellan, 2007), economic hardships cause chronic stress, tension, and arguments among parents. Experiences of economic hardships and scarcity—which are more common among lower SES than higher SES families—frequently demand attention, making parents less available to their adolescent (Mani et al., 2013; Shah et al., 2012). Ultimately, heightened levels of stress as a result of economic hardships push parents toward harsher child-rearing behaviors, a poorer appraisal of the adolescent's socioemotional needs, and less support (Cohen et al., 2008; Conger et al., 2010). Parental support can for example be experienced in the form of unconditional acceptance, empathic listening, and providing encouragement when adolescents are having a difficult time (Nurmi, 1991). Such experiences of parental support help adolescents to contemplate their future orientations with more optimism and motivation, and in more detail (McCabe & Barnett, 2000).

A high-SES context of affluence, stability, and predictability facilitates adolescents in consistently achieving social and educational goals through their own efforts, which nurtures a strong sense of control, referring to the perception that their

own efforts result in desired future outcomes (Conger et al., 2009). In contrast, in a low-SES context—characterized by scarcity, instability, and unpredictability—adolescents may experience more difficulties in accomplishing social and educational goals despite considerable efforts, which nurtures a diminished sense of control and the feeling that external factors such as fate, luck, or other people control the course of their life (Manstead, 2018). Adolescents with a stronger sense of control are optimistic about the availability of resources in the nearby future, and have a strong belief that those resources can effectively be accessed (Lachman & Weaver, 1998). As such, growing up in a lower SES background can foster a weaker sense of control in adolescents, who might subsequently set less positive future orientations compared to adolescents from a higher SES background.

1.2 | Socioeconomic divergence in future orientations during covid-19

The covid-19 pandemic has strengthened and even increased social inequalities globally (Stiglitz, 2021), including in the Netherlands (CPB, 2020b; SCP, 2020). Families from lower socioeconomic backgrounds are more negatively affected by the pandemic and lockdown regulations than those from higher socioeconomic backgrounds (Brooks et al., 2020). Individuals with a lower SES typically are more exposed to the virus as essential vocational workers (e.g., in nursing, public transport, supermarkets) that are expected to come to their workplace whereas individuals with a higher SES are facilitated to perform their white-collar jobs from home. Individuals with a lower SES are also more likely to lose their job or see their income reduce, and have fewer buffers to maintain the same living standards over an extended period of time before incurring debt, compared to their higher SES counterparts (Matthews et al., 2010). While higher SES families will also be challenged to make adjustments during the lockdown, the contextual levels of affluence, stability, and predictability are fundamentally less affected.

As a consequence, the educational and social challenges during covid-19, and in particular during lockdown, are expected to be larger among adolescents from lower SES families than among adolescents from higher SES families. For example, adolescents from higher SES families quarantine in a larger house with the privacy of their own bedroom, laptop, and stable internet connection to stay in touch with teachers and peers, whereas adolescents from a lower SES background quarantine in a smaller house, share rooms and devices with siblings, and may have a poorer internet connection resulting in substandard educational and social interactions (Koenig et al., 2021). Consequently, adolescents from a higher SES family can more effectively adjust to novel requirements toward realizing their future orientations compared to adolescents from a lower SES family, for example, a smooth transition from offline to online education.

This anticipated stronger decline in positive future orientations among lower SES adolescents compared to higher SES adolescents is expected to be driven in part by a similar stronger decline in parental support and sense of control. The family environment will, due to covid-regulations, become the primary source of real-life social interactions for adolescents (Donker et al., 2021), instead of their peers, meaning that the (lack of) support that parents offer is relatively more impactful on adolescent's positive future orientations than before the lockdown. Furthermore, material constraints that prevent adolescents from lower SES families to transition from offline to online school and social life may negatively affect their sense of control (Low & Mounts, 2022), in addition to the decline in sense of control that adolescents may already experience as a result of lockdown regulations and uncertainties.

1.3 | Present study

Four research questions are central in this study: (RQ1) Do socioeconomic differences in adolescent's positive future orientations increase during covid-19 compared to before?; (RQ2) Do socioeconomic differences in parental support explain changes in positive future orientations?; (RQ3) Do socioeconomic differences in sense of control explain changes in positive future orientations?; and (RQ4) Do socioeconomic differences in covid-19 related hardships explain changes in positive future orientations? With regard to the first research question, we expected adolescents from a lower SES background to have less positive future orientations before covid-19 compared to adolescents from a higher SES background (H1.1); and a stronger decline in positive future orientations during covid-19 among adolescents from a lower SES compared background compared to adolescents from a higher SES background (H1.2). Similarly, we expect adolescents from a lower SES background to receive less parental support (H2.1) and have a lower sense of control (H3.1) before covid-19 compared to adolescents from a higher SES background; and a stronger decline in parental support (H2.2.) and sense of control (H3.2) during covid-19 among adolescents from a lower SES compared background compared to adolescents from a higher SES background. Furthermore, we expected adolescents from a lower SES background to report more covid-19 related hardships than adolescents from a higher SES background (H4).

2 | METHODS

2.1 | Participants and procedure

We used data from the Youth Got Talent project, an ongoing longitudinal study on late adolescent well-being. Adolescents in this study (aged 16+) attended classes ($k = 72$) in three vocational schools in the region of Utrecht in the Netherlands and participated in training in fields such as creative, technical, and health education. This type of tertiary education prepares adolescents for a specific, practical vocation. In the Dutch educational system, it is commonly referred to as “intermediate vocational education,” ranking higher than lower vocational education or special education, but ranking lower than higher vocational education or university education on the educational ladder (also see Schmengler et al., 2021). The adolescents in our study are the vocational workers of the future, who are essential to society and economy, but who may also be found in a precarious situation (Standing, 2015)—particularly during a pandemic and its aftermath. Our sample, therefore, aims to be specifically representative of Dutch adolescents in intermediate vocational education.

A total of $N = 1372$ adolescents participated in the two waves of data collection. Between October 2019–January 2020 (T1), $n = 1231$ adolescents participated and roughly 6 months later in May–June 2020 (T2), $n = 830$ adolescents participated. Most adolescents ($n = 689$) participated at both time points, but some adolescents only participated in either the first wave ($n = 542$) or the second wave ($n = 141$). Data from all $N = 1372$ adolescents were used in the main analyses.

Of the $n = 1231$ participating adolescents at T1, 47 adolescents did not fill out the future orientations questionnaire (3.8%), 52 adolescents did not fill out the parental support questionnaire (4.2%), and 45 adolescents did not fill out the sense of control questionnaire (3.6%). Of the $n = 830$ participating adolescents at T2, 29 adolescents did not fill out the future orientations questionnaire (3.5%), 31 adolescents did not fill out the parental support questionnaire (3.7%), and 27 adolescents did not fill out the sense of control questionnaire (3.2%). Furthermore, 19 adolescents did not fill out the covid-19 hardships questionnaire at T2 (2.3%).

We compared demographic characteristics of adolescents who participated at both time points ($n = 689$) to adolescents who participated only at T1 ($n = 542$). Adolescents who dropped out were older ($M_{\text{diff}} = 0.35$, $t(1225) = 3.36$, $p < .01$), were more likely to be male ($\chi^2(2) = 17.54$, $p < .001$), and more likely to have a lower SES background ($\chi^2(2) = 16.87$, $p < .001$). Adolescents who dropped out reported similar scores on positive future orientations, parental support, and sense of control before covid-19 as adolescents who participated in both waves. The missing data in our data set was not missing completely at random (Little's MCAR test; $\chi^2(511) = 824.9$, $p < .001$). Considering the attrition pattern in our sample, missing data were assumed to be at least partially missing at random. Missing data were handled using full information maximum likelihood estimations in our structural equation model.

At both time points, adolescents were registered in the same class with the same mentor. Roughly a quarter of the classes that participated before covid-19 did not participate during covid-19, and within participating classes, the adolescent response rate was over 65% (with about 15% of the nonresponding adolescents dropping out of school before T2). Researchers administrated self-report questionnaires in the classroom (T1) or during online lessons (T2) and these took about 20–30 min to complete. Adolescents gave active consent and were informed that data would be anonymized. Ethical approval was gained from the Ethics Assessment Committee of the Faculty of Social Sciences at Utrecht University (FETC18-070) in 2018 and updated in 2020. Most adolescents had an age between 16 and 21 years old before covid-19 ($M_{\text{age}} = 17.8$, $SD = 1.82$); and 56% were female.

2.2 | Measures

2.2.1 | SES

A participant's SES was measured using the Family Affluence Scale (FAS) (Currie et al., 1997; Torsheim et al., 2016). The FAS consists of six items (e.g., “Does your family own a car/van?”), with answer categories indicating quantity (e.g., “Yes/No”; “One/Two/Three”). A rankit transformation was performed on the sum scores to obtain standardized SES scores between 0 and 1, with a higher score indicating a higher SES. FAS is a composite indicator, constructed of separate independent items indicating family material assets, so internal consistency between items is not necessary (Boyce et al., 2006).

2.2.2 | Positive future orientations

A participant's positive future orientations were measured using eight statements on adulthood goals (e.g., “How big do you think is the chance that you get a well-paying job?”) and eight statements on feelings about the future (e.g., “Enthusiasm”; “Doubts”). All these statements are answered on a 5-point Likert scale (1—“Very small/Not at all” to 5—“Very large/Very

much”). A factor score was calculated for each participant, where a higher score indicates more positive future orientations. The internal consistency of the future orientations questionnaire can be considered as good, both at T1 ($\alpha = .87$) as well as at T2 ($\alpha = .88$), in line with previous validation research (Jessor et al., 1996; Liebenberg et al., 2015).

2.2.3 | Parental support

The parental support that a participant perceives to receive is measured using four statements (e.g., “At home, I get the emotional support and help that I need”) (Zimet et al., 1988). Participants answer on a 7-point Likert scale (1—“Totally disagree” to 7—“Totally agree”), with higher scores indicating more parental support. A factor score was calculated for each participant, where a higher score indicates more parental support. The internal consistency of the parental support measure is good at both time points ($\alpha = .92$).

2.2.4 | Sense of control

A participant's sense of control is measured using 11 statements (Lachman & Weaver, 1998); 7 items regarding sense of mastery (e.g., “I can pretty much do everything that I go for”) and 4 items regarding sense of constraint (e.g., “I have little control over what is happening to me”). All items can be answered on a 5-point Likert scale (1—“Totally disagree” to 5—“Totally agree”), and all items were coded as such that higher scores indicate a higher sense of control. A factor score was calculated for each participant, where a higher score indicates a stronger sense of control. The internal consistency of the sense of control questionnaire can be considered as acceptable ($\alpha = .63$ at T1; $\alpha = .78$ at T2).

2.2.5 | Covid-19 hardships

The extent to which a participant has experienced hardships during the covid-19 crisis was measured using nine statements (e.g., “I am afraid that my family will contract the Corona virus”) that are scored on a 5-point Likert scale (1—“Totally disagree” to 5—“Totally agree”). This covid-19 hardships questionnaire is cohort-specific, and has been found to have an adequate internal consistency ($\alpha = .71$). For our study, we excluded 7 from an initial 16 items due to theoretical overlap with our measures of future orientations or parental support. The remaining nine items were used to obtain a latent factor score for each participant, where a higher score indicates more covid-19 related hardships. An overview of all covid-19 hardships items can be found on Open Science Framework (OSF; <https://osf.io/vxb9y>).

2.2.6 | Strategy of analysis

First, a number of descriptive statistics (mean item scores, standard deviations, Pearson correlations) were obtained on the precovid (T1) variables of SES, positive future orientations, parental support, sense of control, and the pericovid-19 (T2) variables positive future orientations, parental support, sense of control, and covid-19 hardships (Table 1). Second, a comprehensive measurement model was estimated to obtain latent variables for positive future orientations, parental support, and sense of control (T1 and T2), and covid-19 hardships for use in the structural model.

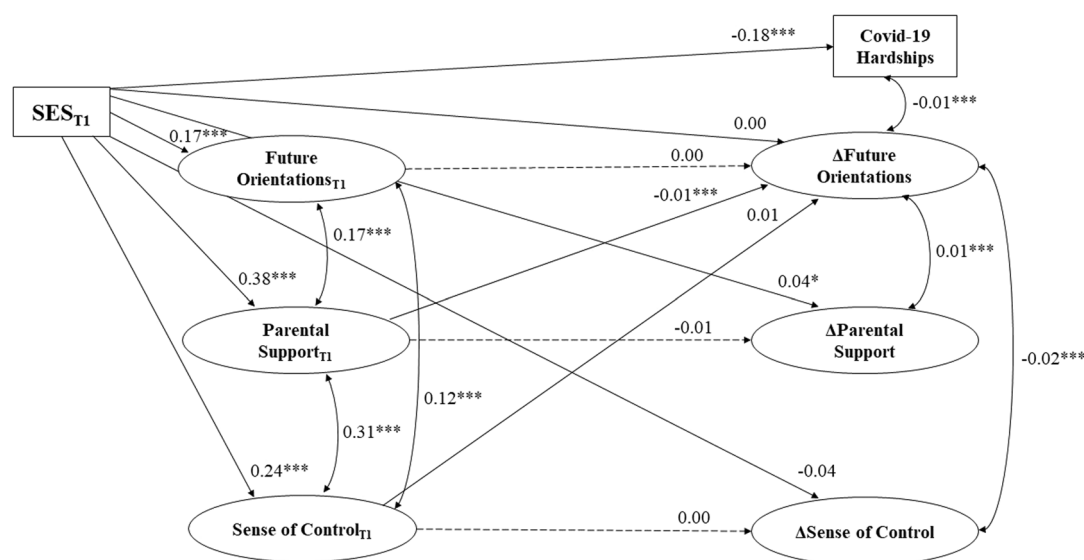
Third, a series of univariate latent change score (LCS) models were analyzed separately, for positive future orientations, parental support, and sense of control. An LCS factor estimates change in a latent variable of interest between two time points, and provides information about (1) the average change between T1 and T2 (i.e., intercept of the LCS), (2) the extent to which individuals differ in the change they manifest over time (i.e., variance of the LCS), and (3) the extent to which change is dependent on scores at T1 (i.e., regression coefficient from T1 to LCS) (Kievit et al., 2018). To answer our research questions, we used LCS modeling in R (Klopack & Wickrama, 2020; McArdle, 2009). LCS is a specific subtype of longitudinal SEM that combines autoregressive and growth curve modeling (Clark et al., 2018). Regarding our research questions, LCS models are particularly helpful in estimating individual differences in growth at the construct level, with the use of 2 waves of data available to us during covid-19—though more measurement waves are preferred when possible (Kievit et al., 2018).

Each participant's resulting LCS on positive future orientations, parental support, and sense of control were saved for use in the structural model. Fourth, a structural equation model was tested which includes the standardized score of SES, latent variables of positive future orientations, parental support, and sense of control at T1;

TABLE 1 Pearson's zero-order correlations between variables before ($n_{T1} = 1231$) and during ($n_{T2} = 830$) covid-19.

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.
Before covid-19										
1. Age	17.2	1.72								
2. SES	0.53	0.27	-.11**							
3. Positive future orientations	3.73	0.52	-.11**	.17**						
4. Parental support	5.84	1.36	-.11**	.10**	.41**					
5. Sense of control	3.62	0.42	-.02	.10**	.58**	.40**				
During covid-19										
6. Positive future orientations	3.68	0.55	-.12**	.13**	.69**	.31**	.42**			
7. Parental support	5.64	1.37	-.06	.14**	.37**	.72**	.33**	.41**		
8. Sense of control	3.62	0.42	-.04	.13**	.46**	.33**	.41**	.58**	.40**	

Abbreviation: SES, socioeconomic status.

* $p < .05$; ** $p < .01$; *** $p < .001$.**FIGURE 1** Structural model of change in adolescent's positive future orientations. All tested associations are included in the figure, except for the covariates age and gender. * $p < .05$; ** $p < .01$; *** $p < .001$.

LCS variables of positive future orientations, parental support, and sense of control at T2; and covid-19 hardships at T2 (Figure 1).

To understand if socioeconomic differences in adolescent's positive future orientations increased during covid-19 compared to before (RQ1), we assessed the significance of the regression coefficients of SES on positive future orientations before covid-19 and of SES on change in positive future orientations during covid-19. To understand if socioeconomic differences in parental support explain changes in positive future orientations (RQ2), we looked at the regression coefficients of SES on parental support at T1, and of SES on change in parental support. To understand if socioeconomic differences in sense of control explain changes in positive future orientations (RQ3), we looked at the regression coefficients of SES on sense of control at T1, of SES on change in sense of control, of sense of control at T1 on change in positive future orientations, and the covariance between change in sense of control and change in positive future orientations. To understand if socioeconomic differences in covid-19 related hardships explain changes in positive future orientations (RQ4), we looked at the regression coefficient of SES on covid-19 hardships, and the covariance between covid-19 hardships and change in positive future orientations. Access to anonymized data and syntax can be obtained through the OSF (<https://osf.io/juafk/>).

2.3 | Confirmatory factor analyses

Confirmatory factor analyses for the separate factors were pooled to estimate a single measurement model as this tends to yield more reliable estimates of factor loadings and prevents issues related to multiple testing and inflated Type 1 error rates (false positives) (Anderson & Gerbing, 1988; Kenny, 2016). In our initial measurement model, questionnaire items were loaded on their corresponding latent variables. Items were restrained from cross-loading onto other latent variables, and residual covariances between items were also restrained. After obtaining poor model fit, a number of modification indices ($\Delta MI > 30$) were implemented that made our model fit the data good (CFI = 0.92; TLI = 0.91; RMSEA = 0.03). These MI were primarily residual covariances between items on the same latent construct across time points; cross-loadings remained constrained. The estimated latent variables for positive future orientations, parental support, and sense of control at both T1 and T2 were saved for later use in our univariate LCS models and in our structural model. For positive future orientations and parental support, residual measurement invariance was achieved between T1 and T2; for sense of control, configural measurement invariance was achieved between T1 and T2. More details on the measurement model can be found in Supporting Information: S1; more details on measurement invariance can be found in Supporting Information: S2 (<https://osf.io/juafk/>).

2.4 | Measurement invariance

For future orientations, metric measurement invariance was achieved between T1 and T2 (RMSEA = 0.04; CFI = 0.94; $\Delta\chi^2 = 14.96$, $p = .38$), but scalar measurement invariance was not achieved (RMSEA = 0.04; CFI = 0.94; $\Delta\chi^2 = 39.49$, $p < .001$). Similarly, for parental support metric measurement invariance was achieved between T1 and T2 (RMSEA = 0.05; CFI = 0.99; $\Delta\chi^2 (2) = 1.51$, $p = .47$), but scalar measurement invariance was not achieved (RMSEA = 0.05; CFI = 0.99; $\Delta\chi^2 (3) = 9.12$, $p < .05$). For sense of control, metric measurement invariance was not achieved between T1 and T2 (RMSEA = 0.08; CFI = 0.65; $\Delta\chi^2 = 1513.9$, $p < .001$). Hence, adolescents may have interpreted questionnaire items on sense of control differently during covid-19 as compared to before (e.g., because of the lockdown).

2.5 | Univariate LCS models

We estimated three separate univariate LCS models; for positive future orientations, parental support, and sense of control. The resulting LCS variables were subsequently used in our structural model.

3 | RESULTS

3.1 | Descriptive statistics

Means and correlations can be found in Table 1. SES correlated positively with our measures of positive future orientations, sense of control, and parental support; and negatively with covid-19 hardships. The autocorrelations between T1 and T2 measures of positive future orientations, sense of control, and parental support were among the strongest correlations found.

3.2 | Structural equation model

We estimated a structural equation model to answer our research questions (Figure 1). After implementing a number of MI, our model fit the data good (CFI = 0.99; TLI = 0.99; RMSEA = 0.03). All model output can be found in Table 2.

As expected (H1.1), SES positively predicts positive future orientations at T1 ($\beta = .17$, $p < .001$). The intercept of the LCS variable for positive future orientations was -0.01 ($z = -3.37$, $p < .01$), indicating a decline in positive future orientations from before to during covid-19 in the sample as a whole. However, contrary to our expectations (H1.2), SES did not predict changes in positive future orientations, $\beta = .00$, $p = .32$.

As expected (H2.1), SES positively predicted parental support at T1 ($\beta = .07$, $p < .01$). The intercept of the LCS variable of parental support was -0.03 ($z = -5.36$, $p < .001$), indicating a decline in parental support from before to during covid-19 in the sample as a whole. SES also positively predicted a change in parental support ($\beta = .04$, $p < .05$), in line with our expectations (H2.2). Furthermore, parental support at T1 negatively predicts change in positive future

TABLE 2 Regression coefficients and covariances of structural equation model, controlled for age and gender.

	Estimate	SE	z Value
Δ Future orientations \leftarrow SES _{T1}	0.00	0.01	-0.01
Δ Future orientations \leftarrow Sense of control _{T1}	0.00	0.00	0.20
Δ Future orientations \leftarrow Parental support _{T1}	-0.01	0.00	-3.12**
Δ Future orientations \leftarrow Future orientations _{T1}	0.01	0.01	0.85
Future orientations _{T1} \leftarrow SES _{T1}	0.17	0.03	5.43***
Sense of control _{T1} \leftarrow SES _{T1}	0.24	0.05	5.13***
Parental support _{T1} \leftarrow SES _{T1}	0.38	0.11	3.38***
Δ Sense of control \leftarrow SES _{T1}	-0.04	0.03	-1.37
Δ Sense of control \leftarrow Sense of control _{T1}	0.00	0.02	0.08
Δ Parental support \leftarrow SES _{T1}	0.04	0.02	2.17***
Δ Parental support \leftarrow Parental support _{T1}	0.00	0.01	-0.17
Covid-19 hardships _{T2} \leftarrow SES _{T1}	-0.18	0.06	-2.78 ***
Δ Future orientations \leftrightarrow Δ Sense of control	-0.02	0.00	-11.92***
Δ Future orientations \leftrightarrow Δ Parental support	0.01	0.00	7.31***
Δ Future orientations \leftrightarrow Covid-19 hardships _{T2}	-0.01	0.00	-4.48***

Abbreviations: covid-19, coronavirus disease; SES, socioeconomic status.

* $p < .05$; ** $p < .01$; *** $p < .001$

orientations ($\beta = -.01$, $p < .001$). The change in parental support was positively correlated with change in positive future orientations, $r = .001$, $p < .001$.

As expected (H3.1), SES positively predicted adolescents' sense of control before covid-19, $\beta = .24$, $p < .01$. The intercept of the LCS variable of sense of control was 0.00 ($z = -1.30$, $p = .19$), indicating no change in sense of control from before to during covid-19 in the sample as a whole. Contrary to our expectations (H3.2), SES did not predict change in sense of control during covid-19, $\beta = -.04$, $p = .16$. Furthermore, sense of control at T1 does not predict change in positive future orientations ($\beta = .01$, $p = .19$). However, the change in sense of control was negatively correlated with change in positive future orientations, as expected ($r = -.02$, $p < .001$).

As expected (H4), SES negatively predicted covid-19 hardships, $\beta = -.18$, $p < .01$. Furthermore, covid-19 hardships were negatively correlated with changes in positive future orientations, $r = -.01$, $p < .001$. It must be noted that the majority of our significant regression coefficients are meager in size (β s $< .20$; Cohen, 1988), and may have a negligible effect in real-life.

4 | DISCUSSION

In this study, we investigated if socioeconomic differences in positive future orientations, parental support, and sense of control before covid-19 increased during covid-19. As expected, adolescents from a lower SES background reported less positive future orientations, less parental support, and a weaker sense of control before covid-19. Contrary to expectations, socioeconomic differences in positive future orientations and sense of control did not increase during covid-19. Moreover, adolescents from a higher SES background reported a stronger decline in parental support during covid-19 than adolescents from a lower SES background. Adolescents who reported more parental support before covid-19 reported a smaller decline in positive future orientations, but having a stronger sense of control before covid-19 did not affect change in positive future orientations during covid-19. During covid-19, adolescents who reported a stronger decline in parental support and sense of control also reported a stronger decline in future orientations. Furthermore, adolescents from a lower SES background reported more covid-19 related hardships, but adolescents who reported more hardships also reported a smaller decline in positive future orientations. Overall, socioeconomic differences in future orientations did not increase from before to during covid-19. Our findings have several theoretical and practical implications.

4.1 | Theoretical implications

Despite a similar decline in positive future orientations, it could be argued that the positive future orientations from adolescents from a lower SES background are more resilient than the positive future orientations of adolescents from a higher SES background (Ellis et al., 2017; Frankenhuis & de Weerth, 2013). Adolescents from a lower SES background experienced less parental support and a weaker sense of control before covid-19, as well as more covid-19-related hardships than adolescents from a higher SES background, yet despite these considerable disadvantages showed a similar decline in positive future orientations as adolescents from a higher SES background. Potentially, exposure to instability and unpredictability before covid-19 gives adolescents from a lower SES background an adaptive advantage during covid-19. For adolescents from a higher SES background, the sudden drop in parental support, and other relatively heightened levels of instability and unpredictability as a result of covid-19, maybe a novel challenge. This finding would be in line with how the development of stress reactivity in childhood environments is understood (Boyce & Ellis, 2005; Del Giudice et al., 2011): adolescents who grow up in a more protected environment (e.g., high SES) experience a similar stress reaction to adversity as adolescents from an unpredictable, perhaps dangerous environment (e.g., low SES), despite being less at risk objectively. If the decline in positive future orientations among adolescents from a higher SES background is indeed partly an overreaction, future research might find that the positive future orientations of these adolescents recover back to precovid-19 levels faster than the positive future orientations of adolescents from a lower SES background.

Alternatively, the decline in positive future orientations among adolescents from a high-SES background may be the result of unmeasured factors, such as the cancellation of more co-curricular or extracurricular activities, or a regression to the mean considering the relatively high positive future orientations before covid-19. It must also be noted that though the decline in positive future orientations is similar for adolescents from a higher and a lower SES background, its real-life consequences may be more problematic among adolescents from a lower SES background (e.g., from positive to negative future orientations) than among adolescents from a higher SES background (e.g., from very positive to positive future orientations).

Our finding that adolescents who reported more covid-19 hardships also reported a smaller decline in positive future orientations was contrary to our expectations, but may be interpreted in light of adolescent's time-perspective in times of crisis (Fieulaine & Apostolidis, 2015). Adolescents who experienced many hardships during the covid-19 pandemic may shift toward a more present-oriented, threat-focused psychological outlook—also known as *contextualism* (Kraus et al., 2012)—with less capacity to worry about future orientations (see also Guthrie et al., 2009). In contrast, adolescents who had a relatively trouble-free lockdown may have had more idle time to worry excessively about their future. Alternatively, adolescents who experience many covid-19 related hardships may cope with the current situation by actively developing positive future orientations (“things will get better”). Hence, the smaller decline in positive future orientations among adolescents who experience many covid-19 related hardships may merely be a relative comparison to their present situation.

4.2 | Limitations

A number of factors may limit the reliability and validity of our research findings. First, the covid-19 pandemic has resulted in a relatively large attrition over time. Though adolescents that dropped-out after the first wave scored similarly on future orientations, parental support, and sense of control as adolescents that participated in both waves, we did find that adolescents from a lower SES background were more likely to drop-out. Considering our theoretical assumptions, it could be expected that these adolescents experienced a strong decline in positive future orientations, parental support and sense of control during covid-19 – perhaps even contributing to their drop-out (Fakkel et al., 2020). If drop-outs could have been retained, we might find that adolescents from a lower SES background experienced a stronger decline in future orientations than adolescents from a higher SES background—more in line with our expectations.

Second, it must be pointed out that our significant findings have small regression coefficients (β s < .20; Cohen, 1988). This suggests that real-life differences between adolescents from a higher or a lower SES background may be negligible. However, considering the large number of variables that have been controlled for in our models, and considering the standardization of all variables, these results are expected to be robust. The large between-person variation in terms of positive future orientations, parental support, and sense of control still indicates a need to be careful with making assumptions about individual adolescents, despite the associations that we have found.

Third, measuring SES in adolescents remains a challenge. Traditional indicators such as parental educational attainment and family income tend to be poorly estimated by adolescents. As such, the FAS is a helpful tool to circumvent this lack of knowledge in participants (Currie et al., 1997; Torsheim et al., 2016). However, considering that the Netherlands has relatively low socioeconomic inequality and relatively high living standards for lower socioeconomic classes, the discriminatory power of certain FAS-items is limited. For example, basically all adolescents reported having a washing machine in their home. On the other hand, measures of household characteristics as an indicator of SES may be particularly

relevant during times of lockdown compared to traditional measures of SES. A more elaborate measure of SES could potentially improve the validity of our findings. However, given the rigid validation of the FAS and the socioeconomic differences that our research has revealed, the FAS could be considered an adequate measure of SES (Hobza et al., 2017).

5 | CONCLUSION

Overall, the socioeconomic difference in positive future orientations from before covid-19 did not increase during covid-19 among adolescents. Adolescents who reported a stronger decline in parental support during covid-19 also reported a stronger decline in positive future orientations. In contrast, adolescents who reported more parental support before covid-19, an increase in sense of control during covid-19, or more covid-19-related hardships reported a smaller decline in positive future orientations during covid-19.

In the aftermath of covid-19, assistance should be provided to any adolescent who reports a considerable decline in future orientations or parental support, regardless of their SES background. However, as the covid-19 pandemic starts to have less impact on adolescents, positive future orientations and parental support may (naturally) recover to precovid levels. In a postcovid-19 era, adolescents from a lower SES background could be facilitated to hold more positive future orientations. Future orientations may for example be improved by actively planning for the nearby future (Nurmi, 1991), such as through career counseling (e.g., at school), but also depends on characteristics of the larger society, including job security, housing opportunities, and living wages (Sharp et al., 2020).

More structural postcovid-19 measures may be necessary to improve the social support system and sense of control of adolescents from a lower SES background, up to the level of adolescents from a higher SES background. At the same time, adolescents from a higher SES background may learn from adolescents from a lower SES background how to minimize a decline in positive future orientations in the face of adversity.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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