Supplementary Material

Supplementary Material S1: Participants' Information

The 389 participants were from 28 different provinces across China, as illustrated in Figure S1.

Figure S1. *Geographic Distribution of Participants Across 28 Provinces in China.*

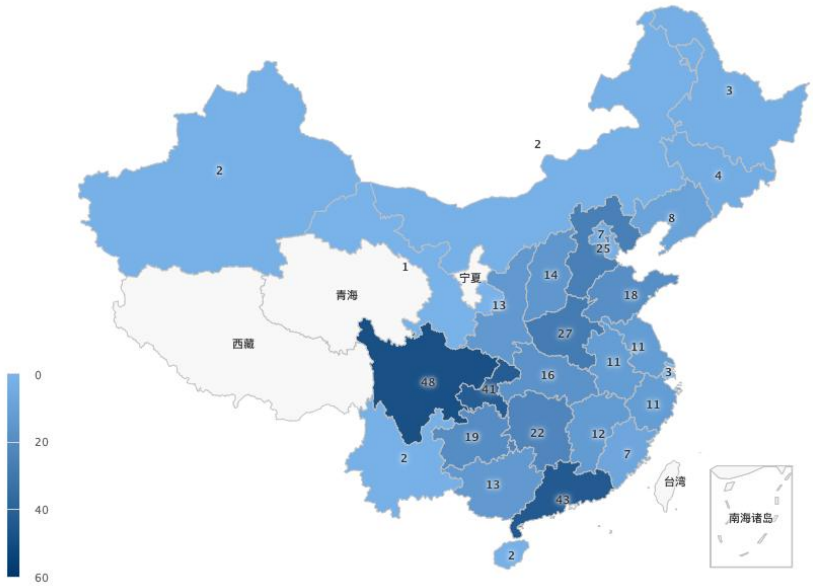


Table S1 presents the frequency distribution of mean scores for short video use (i.e., active short video use, passive short video use, and usage time) and anxiety symptoms. The majority of participants reported low frequencies of active short video use (mean score ≤ 2). In contrast, most participants reported high frequencies of passive short video use and overall usage time, with only one participant indicating no use at all.

Table S1. *The Proportion of Participants.*

Mean score Range 1 to 7	Anxiety symptoms *N* (%)	Active short video use *N* (%)	Passive short video use *N* (%)	Use time *N* (%)
x = 1	0 (0%)	63 (16.2%)	1 (0.3%)	1 (0.3%)
1 < x ≤ 2	81 (20.8%)	275 (70.7%)	53 (13.6%)	22 (5.7%)
2 < x ≤3	104 (26.7%)	37 (9.5%)	189 (48.6%)	110 (28.3%)
3 < x ≤4	129 (33.2%)	13 (3.3%)	89 (22.9%)	168 (43.2%)
4 < x ≤5	63 (16.2%)	1 (0.3%)	57 (14.7%)	88 (22.6%)
5 < x ≤6	10 (2.6%)			
x =7	2 (0.51%)			

Table S2 presents the number and proportion of participant responses in the Experience Sampling Method (ESM). A total of 244 participants (62.72%) completed all ESM rounds, of whom 133 (54.51%) were female. Additionally, 118 participants (30.33%) completed between 54 and 59 rounds, with 50 (42.37%) identifying as female. Twenty participants (5.14%) completed between 48 and 53 rounds, including 5 females (25%). Three participants (0.77%) completed between 42 and 47 rounds, none of whom were female. Another three participants (0.77%) completed between 36 and 41 rounds, including one female (33.33%). One female participant completed 35 rounds; although incomplete, her response rate exceeded 50%. Overall, all participants achieved a valid response rate above 50%, and thus none were excluded from the final analysis.

Table S2. *The Number and Proportion of Participant Responses.*

Response rate	*N*	%	Female *N* (%)
60 rounds	244	62.72%	133 (54.51%)
54–59 rounds (90–99%)	118	30.33%	50 (42.37%)
48–53 rounds (80–89%)	20	5.14%	5 (25.00%)
42–47 rounds (70–79%)	3	0.77%	0 (0.00%)
36–41 rounds (60–69%)	3	0.77%	1 (33.33%)
30–35 rounds (50–59%)	1	0.25%	1 (100.00%)
Total	389	100%	192 (49.10%)

Supplementary Material S2: The DSEM Equations With Covariates of Short Video Use and Anxiety Symptoms

The primary study variables—anxiety symptoms (ANX), short video use (SVU), and upward social comparisons (COM)—were partitioned into within- and between-person components, respectively. When time covariates are added to the model, the within-person estimation can be expressed as follows:

$$ANX_{ti}^{w} = \alpha_{A,i} + \varphi_{AA,i}ANX^{w}{}_{(t-1)\,i} + \varphi_{SA,i}SVU^{w}{}_{(t-1)\,i} + \beta_{WA,i}Period^{w} + e_{1ti},$$

$$SU_{ti}^{w} = \alpha_{S,i} + \varphi_{SS,i}SVU^{w}{}_{(t-1)\,i} + \varphi_{AS,i}ANX^{w}{}_{(t-1)\,i} + \beta_{WS,i}Period^{w} + e_{2ti}$$

When ANX is the target outcome, $\alpha_{A,i}$ is intercept; $\varphi_{AA,i}$ is autoregressive slope; $\varphi_{SA,i}$ captures the effect of SVU at time *t* on ANX at time *t+1*; $\varphi_{WA,i}$ captures if a time is a midday (versus evening) at time *t* on ANX at time *t*. Similarly, when SVU is the target outcome, $\alpha_{S,i}$ is intercept; $\varphi_{SS,i}$ is autoregressive slope; $\varphi_{AS,i}$captures the effect of ANX at time *t* on SVU at time *t+1*; $\beta_{WS,i}$ captures if a time is a midday (versus evening) at time *t* on SVU at time *t*.

At the between-person level, the parameters can be expanded to:

$$\alpha_{A,i} = \gamma_{00} + \gamma_{01}COM + \mu_{0i},$$

$$\alpha_{S,i} = \gamma_{10} + \gamma_{11}COM + \mu_{1i},$$

$$\varphi_{AA,i} = \gamma_{20} + \gamma_{21}COM + \mu_{2i},$$

$$\varphi_{SS,i} = \gamma_{30} + \gamma_{31}COM + \mu_{3i},$$

$$\varphi_{SA,i} = \gamma_{40} + \gamma_{41}COM + \mu_{4i},$$

$$\varphi_{AS,i} = \gamma_{50} + \gamma_{51}COM + \mu_{5i},$$

$$\beta_{WA,i} = \gamma_{60} + \gamma_{61}COM + \mu_{6i},$$

$$\beta_{WS,i} = \gamma_{70} + \gamma_{71}COM + \mu_{7i},$$

$$\sigma_{1i}^{2} = exp(w_{00} + \gamma_{80}COM + u_{8i}),$$

$$\sigma_{2i}^{2} = exp(w_{10} + \gamma_{90}COM + u_{9i})$$

Where the autoregressive coefficients ($\varphi_{AA,i}$, $\varphi_{SS,i}$) and cross-lagged coefficients ($\varphi_{SA,i}$, $\varphi_{AS,i}$) are moderated by upward social comparisons.

When demographic covariates are added, the between-person level equation can be expanded as:

$$\alpha_{A,i} = \gamma_{00} + \gamma_{01}COM + \gamma_{02}Age + \gamma_{03}SES + \gamma_{04}Gender + \mu_{0i},$$

$$\alpha_{S,i} = \gamma_{10} + \gamma_{11}COM + \gamma_{12}Age + \gamma_{13}SES + \gamma_{14}Gender + \mu_{1i},$$

$$\varphi_{AA,i} = \gamma_{20} + \gamma_{21}COM + \gamma_{22}Age + \gamma_{23}SES + \gamma_{24}Gender + \mu_{2i},$$

$$\varphi_{SS,i} = \gamma_{30} + \gamma_{31}COM + \gamma_{32}Age + \gamma_{33}SES + \gamma_{34}Gender + \mu_{3i},$$

$$\varphi_{SA,i} = \gamma_{40} + \gamma_{41}COM + \gamma_{42}Age + \gamma_{43}SES + \gamma_{44}Gender + \mu_{4i},$$

$$\varphi_{AS,i} = \gamma_{50} + \gamma_{51}COM + \gamma_{52}Age + \gamma_{53}SES + \gamma_{54}Gender + \mu_{5i},$$

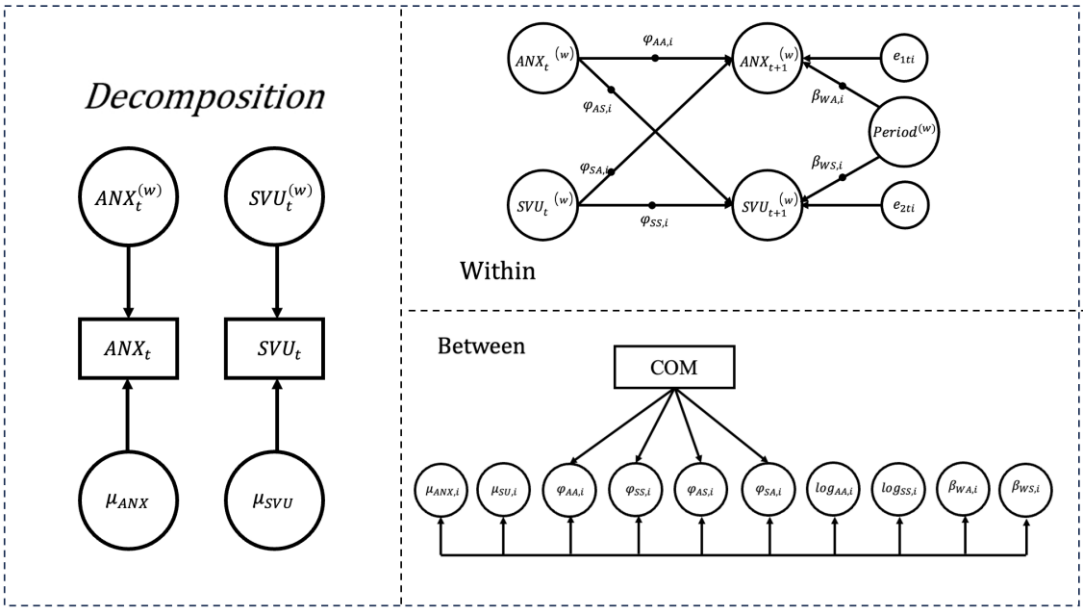
$$\beta_{WA,i} = \gamma_{60} + \gamma_{61}COM + \gamma_{62}Age + \gamma_{63}SES + \gamma_{64}Gender + \mu_{6i},$$

$$\beta_{WS,i} = \gamma_{70} + \gamma_{71}COM + \gamma_{72}Age + \gamma_{73}SES + \gamma_{74}Gender + \mu_{7i},$$

$$\sigma_{1i}^{2} = exp(w_{00} + \gamma_{80}COM + \gamma_{82}Age + \gamma_{83}SES + \gamma_{84}Gender + u_{8i}),$$

$$\sigma_{2i}^{2} = exp(w_{10} + \gamma_{90}COM + \gamma_{92}Age + \gamma_{93}SES + \gamma_{94}Gender + u_{9i})$$

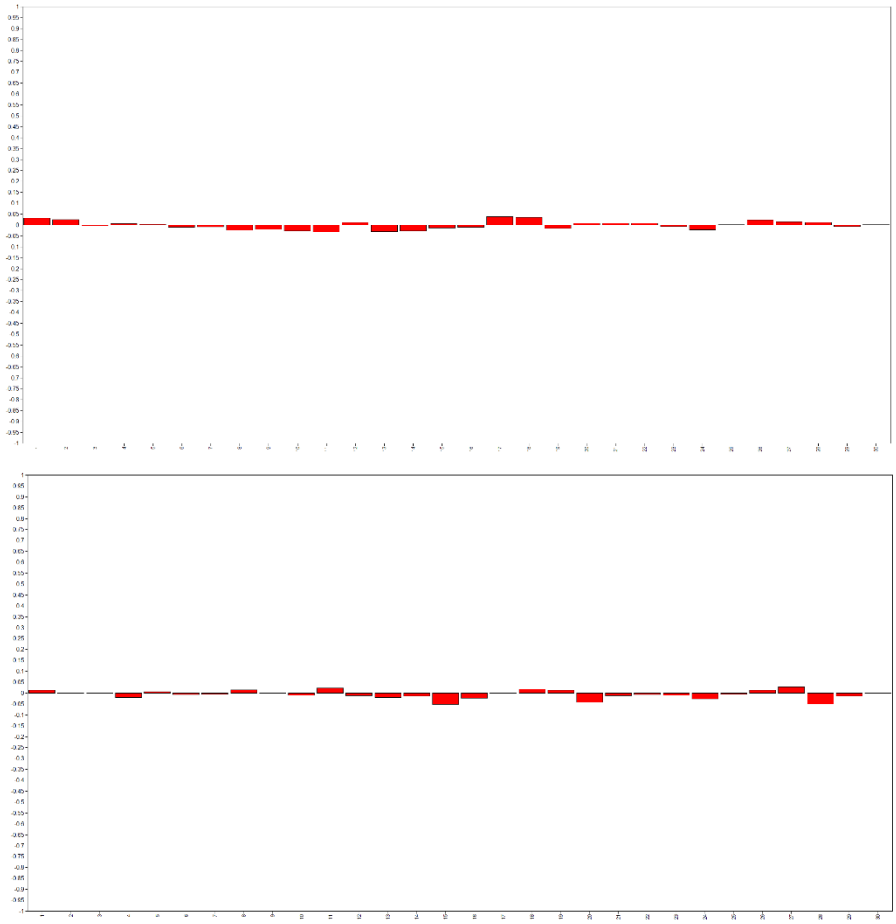
Figure S2. *The DSEM With Covariates of Short Video Use and Anxiety Symptoms.*



Note. ANX = anxiety symptoms; SVU = short video use; COM= upward social comparison. $\varphi_{AA,i}$ and $\varphi_{SS,i}$ refer to the autoregressive effects of anxiety symptoms and short video use, respectively. $\varphi_{SA,i}$ and $\varphi_{AS,i}$ represent the influence of anxiety symptoms in the previous time on the current short video use, and the influence of short video use in the previous time point on the current anxiety symptoms, respectively. e_{1ti} and e_{2ti} represent residual for anxiety symptoms and short video use, respectively. $log_{AA,i}$ and $log_{SS,i}$ represent the within-level residual variance of anxiety symptoms and short video use, respectively. w represents the intra individual estimate, μ represents the mean, and the bold black dots represent random parameters. Period represent the influence of time.

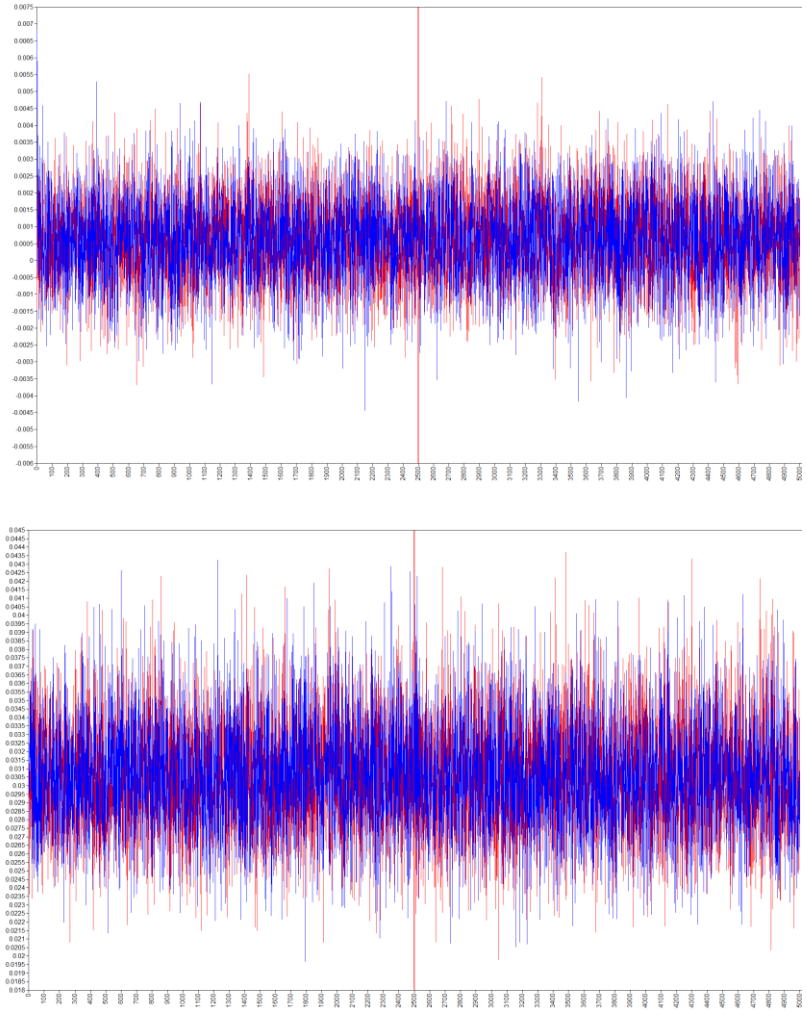
Supplementary Material S3: Model Fitting

1. Bayesian Autocorrelations



Note. The upper plot displays the autocorrelation of active short video use at the within-person level, while the lower plot shows the autocorrelation coefficients for the moderation effect of upward social comparison on the autoregressive paths of anxiety symptoms. The X-axis represents the time intervals, and the Y-axis represents the autocorrelation values. Across the three DSEM models, most autocorrelations are below 0.1, indicating acceptable model convergence.

2. Bayesian Trace Plots



Note. The upper plot presents the trace plot of the autocorrelation coefficient for active short video use, while the lower plot shows the trace plot for the random parameter representing the moderating effect of upward social comparison on the relationship between anxiety symptoms and active short video use. The X-axis indicates the iteration interval, and the Y-axis reflects the autocorrelation values. Both parameters are modeled as random effects.

Supplementary Material S4: Results of Between-Person Level Correlation Analyses

The between-person level correlation results are presented in **Tables S3, S4,** and **S5**. The association between anxiety symptoms and active short video use was not statistically significant (r = -.078, 95% CI = [−0.179, 0.025]). Similarly, the relationship between anxiety symptoms and passive short video use was also non-significant (r = −.065, 95% CI = [−0.166, 0.039]). However, a significant negative correlation was found between anxiety symptoms and the duration of short video use (r = −.183, 95% CI = [−0.282, −0.081]; see **Table S5**), suggesting that longer time spent on short video use may be associated with a reduction in anxiety symptoms.

Table S3. *Between-Person Level Correlation Results From Active Short Video Use and Anxiety Symptoms.*

Variables	1	2	3	4	5	6
1. Anxiety symptoms	—					
2. Anxiety symptoms autoregressive coefficients	**.206**	—				
3. Active short video use autoregressive coefficients	.014	−.012	—			
4. Active short video use on anxiety symptom	−.068	.210	.004	—		
5. Anxiety symptom on active short video use	.030	.031	−.011	.072	—	
6. Active short video use	−.078	−.113	**.154**	.075	.141	—

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero.

Table S4. *Between-Person Level Correlation Results From Passive Short Video Use and Anxiety Symptoms.*

Variables	1	2	3	4	5	6
1. Anxiety symptoms	—					
2. Anxiety symptoms autoregressive coefficients	**.227**	—				
3. Passive short video use autoregressive coefficients	−.055	.149	—			
4. Passive short video use on anxiety symptom	.038	−.018	−.212	—		
5. Anxiety symptom on passive short video use	−.007	**−.368**	−.217	**.687**	—	
6. Passive short video use	−.065	−.056	−.048	.048	.053	—

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero.

Table S5. *Between-Person Level Correlations Results From Short Video Use Time and Anxiety Symptoms.*

Variables	1	2	3	4	5	6
1. Anxiety symptoms	—					
2. Anxiety symptoms autoregressive coefficients	**.222**	—				
3. Short video use time autoregressive coefficients	.016	.064	—			
4. Short video use time on anxiety symptom	.117	−.042	**−.351**	—		
5. Anxiety symptom on active short video use	−.001	**−.375**	−.140	**.783**	—	
6. Usage time	**−.183**	−.024	.108	−.168	−.068	—

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero.

Supplementary Material S5: The DSEM Results Including Time Covariates and Demographic Covariates

1. The DSEM With Covariates Standardized Estimates

Table S6. *The DSEM With Covariates Standardized Estimates.*

	Model 1 DSEM of ASVU			Model 2 DSEM of PSVU			Model 3 DSEM of SVUT		
	Estimate	*SE*	95% CI	Estimate	*SE*	95% CI	Estimate	*SE*	95% CI
Within-person level									
ANX→ANX	**0.175**	**0.007**	**[0.160, 0.189]**	**0.172**	**0.007**	**[0.156, 0.184]**	**0.172**	**0.007**	**[0.157, 0.185]**
SVU→SVU	**0.193**	**0.008**	**[0.178, 0.208]**	**0.241**	**0.007**	**[0.228, 0.255]**	**0.211**	**0.007**	**[0.198, 0.225]**
SVU→ANX	−0.007	0.006	[−0.021, 0.004]	−0.006	0.007	[−0.019, 0.007]	0.004	0.007	[−0.009, 0.017]
ANX→SVU	−0.009	0.006	[−0.020, 0.004]	−0.008	0.007	[−0.021, 0.006]	−0.007	0.007	[−0.021, 0.006]
LogANX	**0.893**	**0.005**	**[0.884, 0.902]**	**0.892**	**0.005**	**[0.882, 0.900]**	**0.890**	**0.005**	**[0.882, 0.899]**
LogSVU	**0.892**	**0.004**	**[0.885, 0.901]**	**0.858**	**0.005**	**[0.848, 0.868]**	**0.869**	**0.005**	**[0.860, 0.878]**
Between-person level									
Effect of COM on									
ANX→ANX	−0.077	0.046	[−0.164, 0.017	−0.089	0.046	[−0.179, 0.002]	**−0.101**	**0.046**	**[−0.191, −0.010]**
SVU→SVU	0.015	0.043	[−0.070, 0.095]	−0.054	0.043	[−0.136, 0.032]	−0.062	0.044	[−0.144, 0.026]
SVU→ANX	−0.129	0.096	[−0.323, 0.058]	**−0.163**	**0.073**	**[−0.301, −0.015]**	−0.075	0.067	[−0.203, 0.057]
ANX→SVU	0.036	0.064	[−0.091, 0.162]	−0.125	0.079	[−0.284, 0.023]	−0.069	0.073	[−0.207, 0.074]
Effect of Gender on									
ANX→ANX	**0.126**	**0.063**	**[0.005, 0.254]**	**0.132**	**0.063**	**[0.008, 0.255]**	0.129	0.063	[−0.003, 0.246]
SU→SU	−0.100	0.060	[−0.212, 0.019]	−0.028	0.059	[−0.148, 0.083]	0.069	0.061	[−0.053, 0.182]
SU→ANX	0.149	0.154	[−0.167, 0.436]	−0.008	0.104	[−0.210, 0.201]	0.059	0.097	[−0.130, 0.240]
ANX→SU	−0.063	0.094	[−0.243, 0.123]	−0.067	0.108	[−0.273, 0.148]	−0.048	0.099	[−0.232, 0.154]
Effect of Age on									
ANX→ANX	−0.059	0.063	[−0.182, 0.063]	−0.057	0.064	[−0.180, 0.067]	−0.046	0.063	[−0.174, 0.071]
SU→SU	−0.086	0.059	[−0.200, 0.032]	−0.004	0.059	[−0.119, 0.111]	**−0.122**	**0.060**	**[−0.242, −0.008]**
SU→ANX	0.097	0.144	[−0.165, 0.394]	0.028	0.109	[−0.191, 0.231]	0.083	0.099	[−0.112, 0.270]
ANX→SU	−0.075	0.085	[−0.248, 0.087]	−0.041	0.107	[−0.253, 0.161]	−0.050	0.098	[−0.234, 0.143]
Effect of SES on									
ANX→ANX	0.052	0.063	[−0.070, 0.095]	0.057	0.063	[−0.063, 0.185]	0.050	0.063	[−0.079, 0.169]
SVU→SVU	0.004	0.059	[−0.117, 0.116]	−0.051	0.059	[−0.162, 0.067]	0.007	0.060	[−0.123, 0.113]
SVU→ANX	0.103	0.127	[−0.148, 0.341]	−0.001	0.100	[−0.191, 0.231]	−0.026	0.094	[−0.214, 0.150]
ANX→SVU	−0.009	0.091	[−0.190, 0.162]	0.047	0.114	[−0.180, 0.268]	−0.001	0.098	[−0.180, 0.198]
Intercepts									
ANX	**2.788**	**0.123**	**[2.538, 3.012]**	**2.829**	**0.115**	**[2.602, 3.056]**	**2.799**	**0.115**	**[2.578, 3.028]**
SVU	**2.355**	**0.136**	**[2.086, 2.613]**	**3.003**	**0.129**	**[2.745, 3.249]**	**3.752**	**0.155**	**[3.438, 4.044]**
ANX→ANX	**0.991**	**0.098**	**[0.798, 1.180]**	**0.990**	**0.092**	**[0.814, 1.176]**	**1.005**	**0.090**	**[0.833, 1.186]**
SVU→SVU	**0.681**	**0.096**	**[0.477, 0.854]**	**1.087**	**0.085**	**[0.920, 1.250]**	**1.086**	**0.084**	**[0.924, 1.251]**
SVU→ANX	−0.259	0.321	[−0.856, 0.374]	−0.216	0.136	[−0.480, 0.047]	0.039	0.123	[−0.190, 0.288]
ANX→SVU	−0.157	0.133	[−0.425, 0.099]	−0.158	0.153	[−0.469, 0.138]	−0.148	0.128	[−0.419, 0.084]
LOGAA	**−0.596**	**0.072**	**[−0.736, −0.454]**	**−0.551**	**0.061**	**[−0.666, −0.427]**	**−0.569**	**0.059**	**[−0.679, −0.446]**
LOGSS	**−1.433**	**0.113**	**[−1.672, −1.233]**	**−1.061**	**0.070**	**[−1.209, −0.934]**	**−0.887**	**0.065**	**[−1.020, −0.765]**
Residual Variances									
ANX	**0.873**	**0.032**	**[0.809, 0.930]**	**0.845**	**0.036**	**[0.774, 0.914]**	**0.870**	**0.032**	**[0.804, 0.928]**
SVU	**0.845**	**0.075**	**[0.677, 0.950]**	**0.933**	**0.023**	**[0.881, 0.972]**	**0.924**	**0.026**	**[0.867, 0.970]**
ANX→ANX	**0.930**	**0.032**	**[0.862, 0.981]**	**0.927**	**0.031**	**[0.861, 0.977]**	**0.929**	**0.030**	**[0.868, 0.978]**
SVU→SVU	**0.928**	**0.044**	**[0.831, 0.989]**	**0.945**	**0.027**	**[0.889, 0.989]**	**0.931**	**0.030**	**[0.867, 0.980]**
SVU→ANX	**0.813**	**0.110**	**[0.579, 0.971]**	**0.887**	**0.066**	**[0.748, 0.983]**	**0.901**	**0.059**	**[0.776, 0.984]**
ANX→SVU	**0.943**	**0.036**	**[0.866, 0.992]**	**0.896**	**0.060**	**[0.768, 0.986]**	**0.920**	**0.052**	**[0.809, 0.991]**
LOGAA	**0.930**	**0.027**	**[0.873, 0.975]**	**0.923**	**0.027**	**[0.867, 0.971]**	**0.931**	**0.025**	**[0.880, 0.974]**
LOGSS	**0.871**	**0.064**	**[0.729, 0.967]**	**0.948**	**0.021**	**[0.904, 0.984]**	**0.933**	**0.024**	**[0.885, 0.974]**

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero. SVU = short video use (active short video use in Model 1, passive short video use in Model 2, and passive short video use time in Model 3); ANX = anxiety symptoms; COM= upward social comparison. $\log_{AA,i}$and $\log_{SS,i}$ represent the within-level residual variance of anxiety symptoms and short video use, respectively.

The results (see **Table S6**) showed that even after controlling for time and demographic covariates, upward social comparison still significantly moderated the effect of passive short video use on anxiety symptoms; β = −0.163, 95% CI [−0.301, −0.015].

2. Between-Person Level Correlation Results With Covariates

Tables **S7–S9** present the results with covariates. After controlling for time effects and demographic variables, a negative correlation remained between short video use time and anxiety symptoms, indicating that the influence between short video use time and anxiety symptoms did not change due to time differences.

Table S7. *Between-Person Level Correlation Results From Active Short Video Use and Anxiety Symptoms.*

Variables	1	2	3	4	5	6
1. Anxiety symptoms	—					
2. Anxiety symptoms autoregressive coefficients	**0.037**	—				
3. Active short video use autoregressive coefficients	.011	0	—			
4. Active short video use on anxiety symptom	−.004	.002	0	—		
5. Anxiety symptom on active short video use	.002	0	0	0	—	
6. Active short video use	.006	−.008	.012	.003	.002	—

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero.

Table S8. *Between-Person Level Correlation From Passive Short Video Use and Anxiety Symptoms.*

Variables	1	2	3	4	5	6
1. Anxiety symptoms	—					
2. Anxiety symptoms autoregressive coefficients	**.245**	—				
3. Passive short video use autoregressive coefficients	−.044	.130	—			
4. Passive short video use on anxiety symptom	.077	−.047	−.213	—		
5. Anxiety symptom on passive short video use	.030	**−.353**	−.209	**.697**	—	
6. Passive short video use	−.005	−.026	−.061	.037	.022	—

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero. ANX = anxiety symptoms; AA = anxiety symptoms autoregressive coefficients; SS = passive short video use autoregressive coefficients; AS = passive short video use on anxiety symptoms; SA = anxiety symptom on passive short video use; PSVU = passive short video use.

Table S9. *Between-Person Level Correlation Results from Short Video Use Time and Anxiety Symptoms.*

Variables	1	2	3	4	5	6
1. Anxiety symptoms	-					
2. Anxiety symptoms autoregressive coefficients	**.228**	—				
3. Short video use time autoregressive coefficients	−.011	.022	—			
4. Short video use time on anxiety symptom	.087	−.065	**−.329**	—		
5. Anxiety symptom on active short video use	.004	**−.338**	−.115	**.799**	—	
6. Usage time	**−.132**	.020	**.140**	−.168	−.100	—

Note. Bolded values indicate statistical significance, defined as 95% confidence intervals that do not include zero.

Supplementary Material S6: FDR Correction

Active short video use, passive short video use, and short video use time are relatively correlated variables. When conducting multiple hypothesis tests, modeling these variables independently may increase the risk of Type I errors, leading to false positive findings (Benjamini & Hochberg, 1995). Moreover, the use of 5,000 bootstrap resamples may further amplify this risk. To mitigate the likelihood of false positives, the false discovery rate (FDR) correction method (Benjamini & Hochberg, 1995) was applied to adjust the one-tailed *p*-values for multiple comparisons. The significance threshold was set at .05. The corrected results are reported in **Table S10**.

Table S10. *FDR Correction.*

	Model 1 DSEM of ASVU		Model 2 DSEM of PSVU		Model 3 DSEM of SVUT	
	One-tailed *p*-value	FDR *p*-value	One-tailed *p*-value	FDR *p*-value	One-tailed *p*-value	FDR *p*-value
Within-person level						
ANX→ANX	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**
SVU→SVU	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**	**<.001**
SVU→ANX	.142	.315	.210	.315	.321	.321
ANX→SVU	.081	.177	.177	.177	.164	.177
Between-person level Effect of COM on						
ANX→ANX	**.020**	**.020**	**.010**	**.015**	**.002**	**.006**
SVU→SVU	.255	.255	.070	.105	**.018**	.054
SVU→ANX	**.049**	.073	**.012**	**.036**	.170	.170
ANX→SVU	.316	.316	.053	.159	.251	.316

Note. Bold values indicate significance based on CIs that do not include *zero* and *p*-value significance below 0.05 after FDR correction. ANX = anxiety symptoms; SVU = short video use; COM= upward social comparison; ASVU =active short video use; PSVU =passive short video use; SVUT = short video use time.

The results showed that the significance levels obtained after FDR correction were consistent with those derived from the 95% confidence intervals, indicating that modeling the variables separately did not lead to false positive or false negative findings.

References

Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. *Journal of the Royal Statistical Society Series B: Statistical Methodology*, *57*(1), 289–300. https://doi.org/10.1111/j.2517-6161.1995.tb02031.x

Trapletti A, Hornik K (2024). tseries: Time series analysis and computational finance (R package version 0.10-57). https://CRAN.R-project.org/package=tseries

Mplus CODE:

```
TITLE: DSEM
DATA: file is data.dat;
variable: names are ID DAY ANX SVU COM GENDER AGE SES TIME;
Usevariable = ANX SVU COM TIME;
missing are all (−999);
cluster=ID;
between = COM;
TINTERVAL = DAY (1);
LAGGED=ANX (1) SVU (1);

Define:
center COM (grandmean);

ANALYSIS:
TYPE = TWOLEVEL RANDOM;
ESTIMATOR = BAYES;
FBITERATIONS = 500;
THIN = 10;
Processors = 2;
CHAINS = 2;

MODEL:
 %WITHIN%
AA | ANX on ANX&1;
SS |SVU on SVU&1;

AS | ANX on SVU&1;
SA | SVU on ANX&1;

PHAT | ANX on time;
PHST | SVU on time;

LOGAA | ANX;
LOGSS | SVU;

 %BETWEEN%
AA on COM (lama11);
```

```
SS on COM (lama12);
AS on COM (lama21);
SA on COM (lama22);

ANX SVU AA SS AS SA LOGAA LOGSS with
ANX SVU AA SS AS SA LOGAA LOGSS;

[ANX];
[SVU];
[AA](betaanx);
[SS](betasvu);
[AS](gamaas);
[SA](gamasa);
[LOGAA];
[LOGSS];

ANX;
SVU;
AA;
SS;
AS;
SA;
LOGAA;
LOGSS;

MODEL CONSTRAINT:
plot (slope1 slope2 slope3 slope4);
loop (COM, −4.373, 3.627, 0.1);
slope1=betaanx+lama11*com;
slope2=betasvu+lama12*com;
slope3=gamaas+lama21*com;
slope4=gamasa+lama22*com;

OUTPUT: TECH1; TECH8; CINTERVAL (hpd); TECH4; STDYX;
PLOT: TYPE = PLOT3; TYPE = PLOT2;
SAVEDATA: BPARAMETERS = DSEM;
```