Supplemental Materials

Methods

Design and Procedure

SDT labs were given a Qualtrics link for their lab's survey[1] and PSA labs' data collection was centralized across labs with one survey using the *formr* framework. Participants recruited by SDT labs only completed this study, and participants recruited by PSA labs completed this and a second, unrelated, PSACR experiment.[2] For those who saw both studies, order was recorded to examine for possible carry-over effects.

Ethics

All data collection labs followed the ethical guidelines of their institutions. Guidelines for Internet-based data collection were followed where applicable[1]. Each lab (1) received ethical approval from their local Institutional Review Board (IRB), or (2) gained approval through Ashland University's Human Subject's Review Board (for the PSA labs) or through Illinois Institute of Technology's IRB (for the SDT labs), or (3) did not require local IRB approval for data collection.

Translations

All study materials were translated into the modal local language of participants recruited by each of the labs. The PSA identified translators for every language represented in our pool of collaborators, except for Thai, which was translated by a SDT lab. In all countries where participants' native language was not English, study materials were forward-

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[1] Two SDT labs (in Iran and Thailand) were not able to use Qualtrics for data collection because of restrictions and used Google Forms to collect data. Because of this difference in survey format, there were irregularities for the six-month behavioural intentions items. For analyses with this six-month behavioural intentions variable, the Thai lab was excluded (n = 240) because they measured items on a 1-7 scale (versus 1-24 weeks), and 10 individuals in the Iranian lab were excluded because they indicated a number higher than 24 [weeks] in the open-ended textbox.

[2] There was a period of approximately one month at the start of data collection (April, 2020) when our study was the only PSACR study collecting data and thus all participants recruited through PSA labs in April only took part in our study.

and backward-translated by two or more translators[2]. Once the translators agreed on a translation, the materials were sent to labs using that particular language for any further cultural adjustment to their local context (e.g., differences between European and Brazilian Portuguese). In total, the survey was translated into 42 languages and regional dialects.

Analytic Strategy

Modelling Approach

Before running models, we ensured there was sufficient variance at both individual and country-levels. Interclass correlation coefficients ranged from .03-.15, indicating that while sufficient for mixed-effects models, at most, only 15% of variance was explained by between-country differences. Most of the variance was between individuals within each country.

In running models with random slopes, we only included countries with sample sizes of 210 or above to help with model convergence. According to Magnusson's[3] guidelines to observe $|r| = .025$ (equivalent to $|Cohen's\ d| = .05$), 70 participants per condition would be needed in experimental groups, indicating a minimum sample size for each country at 210. This yielded a sample of 23,557 individuals in 35 countries for these analyses. Comparisons of AIC indicated that the maximal models fit the data better than the intercept only models. Nonetheless, we did not observe large variance around the slopes of condition (see *Table 3* in the main text). Because of little variance around the slopes in some models, some models failed to converge. This indicates that effects of our manipulation did not vary widely across these 35 countries, even though countries might differ in their averages on the measured variables.

To test Hypothesis 1, we created two dummy variables, where the autonomy-supportive message or no-message conditions were coded 1, with the controlling message condition as the reference group (coded 0). By entering both dummy codes simultaneously

into each mixed-effects model, we tested whether no message and an autonomy-supportive message differed from being exposed to a controlling message, testing Hypothesis 1. For Hypothesis 2, we examined whether self-reported autonomous and controlled motivation, entered simultaneously, predicted outcomes (defiance and short and long-term behavioural intentions) using mixed-effects models.

Criteria for Evaluating Evidence

We used the statistical package *r2glmm* (version 0.1.2)[4] to calculate semi-partial R^2 values and their 95% confidence intervals (CIs) for mixed model coefficients and calculated the square root for partial *r* values. With these semi-partial R^2 estimates, we can obtain the relative effect sizes of the fixed effects in our models, while accounting for random effects (i.e., in this case, random intercepts) as well as clustering by country on the outcome variables[5]. We set the interval null (the region of practical equivalence) as *pr* = -.025 to .025 (equivalent to |*Cohen's d*| = .05). Using this effect size to determine evidence supporting our hypotheses, we preregistered that if an effect and its 95% CI were fully outside the interval null in the predicted direction, the hypothesis would be considered supported. However, if an effect or its 95% CI overlapped with the interval null, the hypothesis would be deemed unsupported.

Quality Checks

First, we examined whether the three conditions differed on our baseline adherence measure, using random-intercept only models. As differences across condition were negligible (*pr* = .014 and .008, see *Table S1* below), and lower than our preregistered threshold, baseline adherence was not included as a covariate in confirmatory models. Second, as this study was bundled with one other study in the PSACR project, we examined potential carryover effects based on the order of presentation (our study was presented first or was the only study participants took for *n* = 17,729, coded 0; or, it was presented after the

bundled PSACR001 study, n = 7,989, coded 1). We tested the main effect of study order and the interaction with condition to examine whether the order effect differentially impacted the effect of condition on the manipulation check (perceptions of social distancing recommendations as controlling). Effects surpassed our preregistered threshold, *pr*s ranging from .035-.043, see *Table S1* below. We tested models excluding those who were exposed to PSACR001 first and found the same pattern of results. We present these subsample results in *Table S2* below and present results from the full sample in the text. This switch to present full sample models in the text represents a deviation from the preregistration; we did this to retain participants from as many countries as possible.

References

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APPENDIX

List of countries (alphabetized) and sample sizes from PSA and SDT networks

Country Name	PSA (n = 18,710)	SDT (n = 7,008)	Total (n = 25,718)
Albania - ALB	2		2
Argentina - ARG	124		124
Armenia - ARM	17		17
Australia - AUS	539	1128	1667
Austria - AUT	527		527
Azerbaijan - AZE	1		1
Bahrain - BHR	1		1
Bangladesh - BGD	21		21
Belgium - BEL	104	1010	1114
Bosnia and Herzegovina - BIH	22		22
Brazil - BRA	105		105
Brunei Darussalam - BRN	1		1
Bulgaria - BGR	83		83
Cabo Verde - CPV	1		1
Canada - CAN	258	253	511
Chile - CHL	278	401	679
China - CHN	468		468
Colombia - COL	109		109
Costa Rica - CRI	191		191
Croatia - HRV	945		945
Cyprus - CYP	5		5
Czechia - CZE	213		213
Denmark - DNK	3		3
Ecuador - ECU	18		18
Egypt - EGY	612		612
Finland - FIN	147	236	383
France - FRA	653		653
Germany - DEU	294	235	529
Greece - GRC	70	55	125
Guadeloupe - GLP	1		1
Guam - GUM	1		1
Hong Kong - HKG	28		28
Hungary - HUN	97		97
Iceland - ISL	1		1
India - IND	35		35
Iran (Islamic Republic of) - IRN	67	184	251
Ireland - IRL	55		55
Israel - ISR	118		118
Italy - ITA	124	552	676

Japan - JPN	1064		1064
Kazakhstan - KAZ	3		3
Kenya - KEN	671		671
Korea (the Republic of) - KOR	285		285
Lebanon - LBN	1		1
Lithuania - LTU	1		1
Luxembourg - LUX	1		1
Malaysia – MYS	52		52
Mexico - MEX	387		387
Moldova (the Republic of) - MDA	7		7
Montenegro - MNE	3		3
Morocco - MAR	63		63
Mozambique - MOZ	1		1
Netherlands (the) - NLD	114	290	404
New Zealand - NZL	140		140
Nigeria - NGA	605		605
Norway - NOR	314		314
Pakistan - PAK	275		275
Peru - PER		413	413
Philippines (the) - PHL	272		272
Poland - POL	1623		1623
Portugal - PRT	190		190
Qatar - QAT	1		1
Republic of North Macedonia - MKD	89		89
Romania - ROU	371		371
Russian Federation (the) - RUS	387		387
Saudi Arabia - SAU	3		3
Serbia - SRB	89		89
Singapore - SGP	72		72
Slovakia - SVK		39	39
Slovenia - SVN	35		35
South Africa - ZAF	491		491
Spain - ESP	5		5
Sweden - SWE	354		354
Switzerland - CHE	321	166	478
Taiwan (Province of China) - TWN	63		63
Thailand - THA	8	240	248
Trinidad and Tobago - TTO	1		1
Turkey - TUR	237		237
Ukraine - UKR	2		2
United Arab Emirates (the) - ARE	12	450	462
United Kingdom of Great Britain and Northern Ireland (the) - GBR	737	195	932
United States of America (the) - USA	2892	1161	4053

Viet Nam - VNM	1	1
Virgin Islands (U.S.) - VIR	1	1
Yemen - YEM	1	1

Table S1

Random intercept models testing effects of conditions on baseline measure of social distancing adherence and manipulation check, including carryover effect on manipulation check

				95% CI around *B*					95% CI around *r*		
Outcome	**term**	***B***	***SE***	**Lower**	**Upper**	***t***	***df***	**|*r*|**	**Lower**	**Upper**	***p***
Baseline adherence	Controlling (intercept)	5.10	0.08	4.94	5.25	63.52	73.73	0.014	0.004	0.027	<0.001
(AIC = 94289)	vs. No message	0.06	0.02	0.01	0.10	2.40	25653.12	0.014	0.002	0.026	0.017
	vs. Autonomy supportive	0.03	0.02	-0.01	0.08	1.41	25650.19	0.008	0.000	0.020	0.159
Carryover effect on manipulation check (perceived control) (AIC = 95872)	Controlling (intercept)	4.21	0.05	4.11	4.31	80.06	83.71	0.170	0.158	0.182	< .001
	vs. No message	-0.50	0.03	-0.56	-0.44	-15.98	24755.57	0.099	0.087	0.111	< .001
	vs. Autonomy supportive	-0.82	0.03	-0.88	-0.76	-25.92	24751.47	0.159	0.147	0.171	< .001
	Carryover (study order)	-0.24	0.04	-0.32	-0.16	-5.84	24803.65	0.037	0.025	0.050	< .001
	vs. No message x carryover	0.31	0.06	0.20	0.42	5.56	24757.99	0.035	0.022	0.047	< .001
	vs. Autonomy supportive x carryover	0.39	0.06	0.28	0.50	6.99	24758.11	0.043	0.031	0.056	< .001
Manipulation check (perceived control)	Controlling (intercept)	4.13	0.05	4.04	4.23	81.46	72.55	0.164	0.152	0.176	< .001
	vs. No message	-0.40	0.03	-0.45	-0.35	-15.48	24760.20	0.096	0.083	0.108	< .001
(AIC = 95920)	vs. Autonomy supportive	-0.69	0.03	-0.75	-0.64	-26.57	24752.82	0.163	0.151	0.175	< .001

Note. N = 25,718; Controlling: n = 8,368; No message: n = 8,790; Autonomy supportive: n = 8,560; The controlling message was the reference group; $|r|$ is absolute value of the partial r for each coefficient calculated from the R^2 values obtained from the statistical package *r2glmm;* we use three decimal places when reporting $|r|$ and its confidence interval because we preregistered our interval null as r = -.025 to .025 and use two decimals for all other values.

Table S2

Random intercept models testing the effect of experimental conditions (Hypothesis 1) and autonomous and controlled motivation (Hypothesis 2), excluding those who were presented with another experiment first

				95% CI around *B*					95% CI around *r*		
Outcome	**term**	***B***	***SE***	**Lower**	**Upper**	***t***	***df***	**|*r*|**	**Lower**	**Upper**	***p***
Baseline adherence	Controlling (intercept)	5.02	.08	4.85	5.18	59.58	72.86	.001	.000	.002	< .001
(AIC = 65467)	vs. No message	.09	.03	.03	.14	3.10	17673.92	.000	.000	.001	.002
	vs. Autonomy supportive	.08	.03	.02	.14	2.81	17670.25	.000	.000	.001	.005
Manipulation check (perceived control)	Controlling (intercept)	4.21	.05	4.11	4.32	76.92	72.23	.037	.032	.043	< .001
(AIC = 65702)	vs. No message	-.50	.03	-.56	-.44	-16.08	16979.09	.014	.011	.018	< .001
	vs. Autonomy supportive	-.82	.03	-.88	-.76	-26.06	16974.00	.037	.031	.042	< .001
Autonomous motivation Hypothesis 1	Controlling (intercept)	5.98	.06	5.87	6.10	102.53	72.14	.004	.002	.006	< .001
(AIC = 53673)	vs. No message	-.06	.02	-.10	-.02	-3.00	17667.20	.000	.000	.001	.003
	vs. Autonomy supportive	.11	.02	.07	.15	5.52	17663.38	.001	.001	.003	< .001
Controlled motivation Hypothesis 1	Controlling (intercept)	4.56	.06	4.44	4.68	75.52	73.52	.011	.008	.014	< .001
(AIC = 61292)	vs. No message	-.36	.03	-.40	-.31	-14.21	17664.23	.010	.008	.013	< .001
	vs. Autonomy supportive	-.09	.03	-.14	-.04	-3.74	1766.27	.001	.000	.002	< .001
Defiance Hypothesis 1	Controlling (intercept)	2.80	.05	2.70	2.90	54.04	71.90	.007	.005	.010	< .001
(AIC = 65059)	vs. No message	-.02	.03	-.08	.04	-.68	17482.81	.000	.000	.000	.498
	vs. Autonomy supportive	-.30	.03	-.36	-.24	-10.41	17479.26	.006	.004	.008	< .001
Defiance Hypothesis 2	Intercept	6.12	.07	5.97	6.26	81.56	385.88	.261	.251	.271	< .001
(AIC = 60063)	Autonomous motivation	-.73	.01	-.75	-.71	-75.89	17413.08	.259	.249	.269	< .001
	Controlled motivation	.22	.01	.20	.23	28.13	17489.24	.044	.038	.050	< .001
Intention to avoid 1week Hypothesis 1	Controlling (intercept)	5.35	.07	5.21	5.49	73.98	74.23	.001	.000	.002	< .001
(AIC = 62117)	vs. No message	.10	.03	.04	.15	3.60	17343.15	.001	.000	.002	< .001
	vs. Autonomy supportive	.08	.03	.03	.13	2.98	17338.55	.000	.000	.001	.003
Intention to avoid 1week Hypothesis 2	Intercept	2.21	.08	2.05	2.37	27.54	285.18	.169	.159	.179	< .001
(AIC = 58915)	Autonomous motivation	.54	.01	.52	.55	56.59	17356.54	.159	.150	.169	< .001
	Controlled motivation	.00	.01	-.02	.01	-.65	17369.97	.000	.000	.000	.513
Intention to avoid 6 months Hypothesis 1*	Controlling (intercept)	16.92	.28	16.36	17.47	60.17	72.81	.000	.000	.000	< .001
(AIC = 110137)	vs. No message	-.05	.12	-.28	.19	-.39	16804.77	.000	.000	.000	.695
	vs. Autonomy supportive	-.04	.12	-.28	.19	-.37	16799.72	.000	.000	.000	.714
Intention to avoid 6 months Hypothesis 2*	Intercept	2.63	.33	1.99	3.27	8.03	373.57	.206	.196	.217	< .001
(AIC = 106290)	Autonomous motivation	2.66	.04	2.58	2.74	64.24	16758.69	.205	.195	.216	< .001
	Controlled motivation	-.39	.03	-.46	-.33	-11.80	16817.64	.008	.006	.011	< .001

Note. N = 17,729; Controlling: *n* = 5,733; No message: *n* = 6,099; Autonomy supportive: *n* = 5,897; The controlling message was the reference group; |*r*| is absolute value of the partial *r* for each coefficient calculated from the R^2 values obtained from the statistical package *r2glmm;* we use three decimal places when reporting |*r*| and its confidence interval because we preregistered our interval null as *r* = -.025 to .025 and use two decimals for all other values. 1w = 1 week, 6m = 6 months. *Excluding erroneous data