Do real-world prosociality programs predict greater psychological well-being in
primary school-aged children?

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Abstract

Numerous laboratory studies suggest that engaging in prosocial action predicts greater psychological well-being, yet little work has examined whether primary school-aged children (aged 5–12) experience these benefits in real-world community settings. In Study 1, we surveyed 24/25 students who completed their entire Grade 6 curriculum in a long-term care home alongside residents called “Elders.” We found that the meaning that students derived from interacting with the Elders strongly predicted greater psychological well-being. In Study 2, we conducted a pre-registered field experiment with 238 primary school-aged children who were randomly assigned to package essential items for disadvantaged children who were either demographically similar or dissimilar to them. Volunteers self-reported their happiness both pre- and post-intervention. While happiness increased from pre- to post-intervention, this change did not differ for children who helped a similar or dissimilar recipient. These studies offer real-world evidence consistent with the possibility that engaging in prosocial action—over an afternoon or year—may enhance children’s psychological well-being.

Introduction

A growing body of research suggests that people derive various psychological benefits from engaging in prosocial action – acts performed with the intention to help others [1]. Indeed, numerous laboratory studies have shown that engaging in prosocial behavior can boost subjective well-being and positive psychological functioning, both among adults and even toddlers under two years of age [e.g., 2–5]. But are these benefits detectable in primary school-aged children (aged 5 - 12) outside the confines of controlled laboratory studies and in realistic community settings? Using both a correlational study and pre-registered experiment, we tested whether two programs designed to foster prosocial behavior in children—one completed in an afternoon and the other over the course of an entire school year—offer any measurable benefit for children’s subjective well-being and positive psychological functioning.

A number of laboratory studies conducted over the past two decades suggest that engaging in prosociality is a path to greater well-being [6,7]. For instance, a recent registered replication report examined the emotional benefits of *prosocial spending* – spending money on others as opposed to oneself – in a series of laboratory and online experiments [4]. In the lab experiment, 712 participants were randomly assigned to purchase a goody bag filled with juice or chocolate for either themselves or a sick child at a children’s hospital. Afterward, participants reported their momentary emotions on two validated measures of well-being. Consistent with the conclusion that kindness promotes well-being for the helper, participants randomly assigned to purchase treats for others reported higher levels of happiness. More broadly, a recent meta-analysis examined responses from 16,425 people across 55 studies in which participants were randomly assigned to engage in a prosocial act or not [8]. The authors report evidence for a

small-to-medium effect size when comparing various prosocial acts to a control condition [8, see also 5]. Thus, giving to others appears to reliably boost well-being for the helper.

The emotional rewards of prosocial action have also been detected in young children. In one lab experiment [2], 20 toddlers under the age of two were introduced to a puppet and, over the span of several minutes, were invited to (a) greet the puppet, (b) receive eight edible treats, (c) watch an experimenter give a treat to the puppet, (d) give a treat provided by the experimenter to the puppet, and (e) give one of their own treats to the puppet. The toddlers' behavior was video recorded throughout, and facial expressions were later coded for happiness by a team of trained coders. Analyses revealed that toddlers smiled more when giving treats away to the puppet than when receiving treats themselves, both when toddlers gave their own treat or an identical treat provided by the experimenter, suggesting that toddlers find giving emotionally rewarding [2, see also 9]. Other research converges with the notion that young children find prosocial action rewarding. For example, two-year-old children who observe a target in need consistently show signs of increased sympathetic arousal as measured via pupil dilation [10]. Interestingly, this arousal is attenuated when either the child or another helper assists the needy target, suggestive that young children (1) are concerned about others' well-being, (2) experience relief when others' needs are met, and (3) are equally relieved whether they or someone else provides the assistance [11].

Young children may often experience the emotional rewards of prosociality because they can and do act in a prosocial fashion [e.g., 12–14]. Primary school-aged children (ages 5 – 12) also have ample opportunities to engage in prosocial action and experience the emotional rewards of prosocial behavior because childhood through adolescence may be a particularly consequential period of prosocial development. Indeed, primary school-aged children may

become more attuned to norms around prosocial behavior, broaden their minds and social network to think of others, and develop a greater skill set to help others. For example, cross-cultural work spanning six diverse societies suggests that costly forms of prosocial behavior are shaped by social norms during middle childhood, such that children's helping patterns begin to track the behavior of local adults between the ages of 6 – 11 [15]. These findings support the idea that children are both sensitive to and motivated to conform to local prosocial norms, suggesting that the experiences and exposure that children have to prosocial norms and experiences during this time period may be important for their prosocial development [15–18].

During late childhood and early adolescence, several cognitive and social changes take place which may facilitate the development of prosociality, including the formation of a stable self-concept, autonomy, and agency [19,20]. Indeed, as children age into adolescence, they are better able to grasp complex ideas (e.g., poverty), broaden their awareness of the needs, perspectives and feelings of people beyond their immediate social circle, and reflect upon how prosocial action aligns with their identity [19,21–25]. Accompanying these advances, adolescents typically gain more autonomy over their actions and can participate in a broader range of prosocial behaviors [20,26,27]. As adolescents develop greater autonomy and self-regulation over their emotions and behaviors, they begin to make decisions in line with more internalized social standards, they may be better equipped to focus on the needs of others and freely choose to engage in prosocial action [20,26,28]. Thus, as children begin to move through adolescence, they may better appreciate the need for prosociality, develop the freedom and capacity to engage in prosocial behavior, and may integrate prosocial values and actions into their overarching self-concept.

Despite the growing consensus that there is value in developing prosociality in primary school-aged children [e.g., 29], only a handful of studies have examined the associations between prosociality development and subjective and psychological well-being in children and adolescents aged 5 – 18 [29–37]. Indeed, a substantial portion of past research has been conducted either with adults or very young children. Moreover, the finding that prosocial action leads to emotional rewards has more often than not been generalized from highly controlled, contrived laboratory studies rather than work conducted in *real-world* community settings [however, see 29,30,33,36]. To be sure, controlled experiments allow researchers to probe the causal relationship between prosocial action and happiness with rigorous and precise control. However, these gains in internal validity often come at the expense of external validity and do not account for the messiness of testing and applying these relationships in the wild [38,39]. Thus, findings from past lab-based experiments should not be assumed to generalize to real world contexts without direct testing.

The importance of examining the link between prosociality and well-being in realistic settings is critical in light of the numerous school- and community-based interventions that aim to nurture a prosocial identity in children, often with the expectation that these programs will enhance children's psychological well-being [40–44]. To date, a wide range of children-focused prosociality programs have been developed, such as Social Emotional Learning programs [e.g., 43], Intergenerational programs [e.g., 45], Service Learning and Community Engagement programs [e.g., 46], Experiential Philanthropy programs [e.g., 47], Prosocial Mentorship programs [e.g., 48], Character Education programs [e.g., 49], and Moral Learning programs [e.g., 50]. Prosociality-focused interventions often differ from other types of programs in their guiding approach to developing prosociality. For example, the broad range of Social Emotional

Learning (SEL) programs focus on developing social and emotional skills, such as enhancing children's awareness of others' emotions through perspective taking activities [43]. Meanwhile, Intergenerational programs foster contact between people of different generations to help improve intergroup attitudes, understanding of others' differences, and foster lasting intergenerational bonds [45]. Regardless of their guiding principles or practical implementation, all prosociality-focused interventions rest on the assumption that school-aged children can develop greater prosocial tendencies by learning about or practicing prosocial behavior in some form or another and that these experiences can foster greater well-being. Critically, however, investigations into the efficacy of these programs is limited in several ways.

First, most explorations into the potential benefits of prosociality programs investigate success on alternative markers of well-being, such as lower incidence of behavioral issues and mental health challenges. For example, meta-analyses conducted on SEL programs indicate that participation may enhance children's academic performance and reduce conduct problems, drug use, and emotional distress (e.g., diminish symptoms of depression, anxiety; [43,52,53]). Better grades, fewer behavioral issues, as well as reduced stress and depression are valuable outcomes. However, consistent with the key focus of positive psychology, well-being is more than the absence of negative states and challenges; well-being involves experiencing positive emotions and psychological outcomes, such as optimism, self-esteem, and self-efficacy [53–55]. Yet, few studies have examined whether prosociality interventions like SEL programs actively boost subjective well-being (i.e., happiness) or enhance other key positive psychological outcomes in primary school-aged children [54,56].

Second, there is mixed evidence that prosociality-focused or closely-related programs can meaningfully impact children's well-being. Examinations of “positive education programs”

suggest that interventions promoting acts of kindness and other positive psychology activities (e.g., gratitude, developing core character strengths) can benefit children's well-being. For example, some studies report an increase positive emotions, relationships with peers, self-efficacy, and overall psychological and social well-being [57–59]. In one study, Schonert-Reichl and Whitehead Arruda [33] randomly assigned over 655 primary school-aged children (aged 9 – 11) to engage in and discuss the value of random acts of kindness. Students assigned to the kindness program felt greater happiness after as compared to a non-program control group. These findings suggest that prosociality-focused interventions may improve well-being among children and adolescents.

Yet, other studies indicate that prosociality-focused interventions are no more beneficial than an active control group. For example, in a longitudinal experiment with over 400 children (ages 9 – 11), students assigned to complete three acts of kindness each week for a month reported significant boosts in positive affect and marginal increases in both their life satisfaction and happiness from baseline to post-program [29]. However, these gains were no different than those observed in the control condition wherein children visited three destinations of their choice each week (see also [60]). Finally, in a month-long experiment with nearly 100 adolescents (aged 14 – 17), performing kind acts each week offered no greater boost in post-program well-being compared to being kind to oneself or reporting on one's daily activities each week [36]. Taken together across studies, there is currently a limited and mixed understanding of how prosociality-focused interventions affect primary school-aged children's subjective well-being and positive psychological functioning overall.

The present work aims to help address the potential for real-world prosociality programs to impact school-aged children's prosociality and well-being by examining two distinct, but

theoretically overlapping programs: The Intergenerational Classroom and Cradles to Crayons. In the *Intergeneration Classroom* (iGen), approximately 25 students from the Saskatoon Public Schools District complete their 6th grade curriculum alongside senior care residents (referred to as “Elders”) in a local care home. Over the course of the school year, children are integrated into the Sherbrooke Community Centre, engaging in close and continued contact each day with senior residents, many of whom live with dementia and a variety of physical and intellectual conditions. Children and Elders engage in conversations, activities, such as reading, games, music, and art, and learn together, as the schoolteachers, Elders, and Sherbrooke Community staff all facilitate and participate in the Grade 6 educational curriculum.

Cradles to Crayons (C2C) is a non-profit organization that provides primary school-aged children with the opportunity to package essential items for children living in poverty between birth and age 12. C2C collects children’s items (e.g., clothes, books, school supplies, toys) via community drives and corporate donations. These items are packed by volunteers in warehouses known as “Giving Factories” and distributed to local children living in homeless and low-income situations. Children as young as five years old can volunteer in these Giving Factories with their families, schools, or community groups. Child volunteers spend part of their day selecting and packaging the items that will be donated to another child in their community.

We focus on these two interventions for both practical and theoretical reasons. Practically, we have a working relationship with these two organizations, which have been conducting their programs for the past 7 (iGen) to 19 years (C2C). Theoretically, these interventions use distinct yet overlapping approaches to foster prosociality in children. Critically, rather than limit children’s experiences of prosociality to simple discussion and educational curriculum like some programs [e.g., 43], both programs provide children with direct, hands-on

opportunities to aid others, but over either a short- or long-term period from as little as several hours to as long as a 10-month school year. In addition, both programs—either by design or facilitation—provide children with hands-on opportunities to help someone who may be quite different from themselves (e.g., older, differentially able, or from a different socio-economic status). It is often assumed that it may be easier or even more emotionally rewarding to help people who are like oneself. For example, some past work shows that school-aged children (aged 5 – 13) expect to be happier after helping similar others [e.g., 62]. On the other hand, there is good reason to suspect that helping people who are dissimilar to you might be particularly emotionally rewarding. Indeed, past work suggests that bridging social capital or establishing connections with people from heterogeneous groups (i.e., people who are socio-demographically different than oneself) can be valuable and rewarding for well-being and positive psychological functioning [62–65]. Thus, the present work offers an opportunity to examine how real-world prosociality programs impact children’s psychological well-being and provides a first look at whether these benefits may be different when helping dissimilar others.

Study 1: The Intergenerational Classroom (iGen)

Materials and methods

Program Description

Like all students in the 6th grade, participants in the Intergenerational Classroom (iGen) are taught the standard curriculum. However, each day during the school year, students interact closely with the senior care residents—colloquially referred to as “Elders”—who help facilitate the students’ learning alongside the teachers and Sherbrooke Community staff. Critically, across these interactions, students engage in both structured and spontaneous forms of prosocial action.

For example, students can help Elders plant vegetables and flowers in the community garden or participate in “Coffee Club,” in which students give a presentation about different coffees from around the world and then make and serve coffee to the Elders. Of course, these activities can help students develop practical skills like gardening or to learn about different cultures through the medium of coffee. However, these programs also enable students to engage in prosocial action by creating a much-appreciated community garden with and for the Elders or by spending time to make and serve them coffee.

Beyond the more structured prosocial activities, students engage in more spontaneous forms of prosocial action as they spend time having conversations with Elders or doing activities with them like reading, chess, music/dance, and painting. To facilitate these interactions and activities, students learn to respectfully interact with and aid the Elders—many of whom live with dementia or varying physical and intellectual conditions. As such, students often help Elders experiencing physical disability to move around the centre, and help Elders experiencing cognitive impairments to engage in cognitively complex activities like puzzles. Moreover, students learn to offer empathy and emotional support as they respectfully engage in conversations with Elders, offering friendship and support to those Elders who feel lonely, bored, or helpless. Thus, iGen provides a long-term immersive experience enabling students to engage in frequent prosocial acts with and for their Elders.

Finally, in addition to more hands-on experiences with prosocial action, the students often observe the teachers, staff, and Elders similarly modeling prosocial interactions. For example, the teacher, staff, and Elders often demonstrate patient and active listening when speaking with Elders or offer help to Elders with ambulatory or cognitive challenges. This prosocial modeling ensures that Elders feel both respect and care while the students learn how to

engage with Elders in a prosocial manner. As such, students also observe and learn from adult models as they socialize and normalize prosocial action across the daily interactions in the care home.

Participants and procedure

In June 2020, we invited the 25 students who participated in iGen during the 2019-2020 academic year to complete a survey about their experiences in the program. Each of these students had applied to participate in the iGen program during the 2018/2019 academic year and were selected at random from a large pool of applicants (roughly 150) from various schools across Saskatoon to participate in iGen. In total, 24 of the students (96%) completed the survey (50% female; $M_{\text{Age}} = 11.5$ years old; $SD_{\text{Age}} = .51$); we received a partial response from one student (missing data on approximately 60% of the measures), but all available data were retained in analyses. Students completed three types of assessments to capture (1) their experiences engaging with the Elders and how meaningful these experiences were perceived to be, (2) their subjective well-being and positive psychological functioning, and (3) their intentions to engage in prosocial acts in the future. These measures are described in detail below (see Table 1 for a summary of study measures, including sample items, scale anchors, and internal consistency statistics). Unless otherwise noted, we averaged across scale items to create an overall index of each outcome. The survey can be found on the Open Science Framework (OSF; https://osf.io/qb9gu/?view_only=157a189c64934e3799ef3cbccf2cbdd1).

Table 1. Summary of Measures (Study 1)

iGen Experiences and Meaning					
Measure	Source	N of items	α	Sample item(s)	Response Options
Experience of meaning	[66]	12	.96	To what degree do you feel that your conversations, activities, and experiences with the Elders were... ...meaningful ...valuable	1 – Not at all 7 – Very much
Number of friendships	Face Valid	1	NA	Did you make any lasting friendships with the Elders of the Sherbrooke Community centre?	Number of friendships reported
Engagement in activities	Face Valid	1	NA	What kind of activities did you regularly do with the Elders? ...Games/Puzzles ...Art ...Read Stories ...Music/Dance ...Conversation ...Other (please specify)	Number of activities selected
Time spent engaging in activities	Face Valid	1	NA	During a regular week, how often would you do each of these activities with the Elders of the community centre? ...Games/Puzzles ...Art ...Read Stories ...Music/Dance ...Conversation ...Other (please specify)	0- Not at all 1-Once a week 2-Twice a week 3-Three times a week 4-Four Times a week 5-Five times a week 6-Six or more times a week

Well-being and Positive Psychological Functioning					
Measure	Source	N of items	α	Sample item(s)	Response Options
Life Satisfaction	Single Item [67]	1	NA	How satisfied are you with your life as a whole?	1 – Dissatisfied 10 – Satisfied
	Student's Life Satisfaction Scale [68] ^a	9	.86	I like the way things are going for me My life is going well I have a good life	1 – Never 2 – Sometimes 3 – Often 4 – Almost Always
Subjective Vitality	Subjective Vitality Scale – Short [69] ^a	6	.91	Typically... ...I feel energized ...I feel alive and vital (full of energy, lively)	1 – Not true at all 7 – Very true
Self-worth	Rosenberg Self Esteem Scale [70]	10	.75	On the whole, I am satisfied with myself I feel that I have a number of good qualities I take a positive attitude toward myself	1 – Strongly Disagree 2 – Disagree 3 – Agree 4 – Strongly Agree
Social Connection	[71]	10	.89	It's easy for me to make new friends at school. I have lots of friends	1 – Not true at all 5 – Always true
Self-efficacy	Resilience Scale [72]	9	.91	When I am in a difficult situation, I can usually find my way out of it. I usually manage one way or another.	1 – Not at all 7 – Extremely
Optimism	Life Orientation Test-R [73]	4	.80	In uncertain times, I usually expect the best. I'm always optimistic about my future	1 – Strongly Disagree 5 – Strongly Agree

Prosociality					
Measure	Source	N of items	α	Sample item(s)	Response Options
Prosocial Intentions	Face Valid	4	.86	How likely are you to... ...volunteer your time in the future? ... give gifts in the future? ... donate to charity in the future? ...keep engaged with Elders in your neighborhood or community in the future?	1 – Not at all 7 – Very much
Prosocial Identity	Moral Identity Scale [74] ^a	10	.91	I try to help others whenever I can. (I am helpful.) I am giving towards others (I am giving.)	
Prosocial Impact	Prosocial Impact Scale [75] ^a	3	.72 ^b	I try to have a positive influence on others I try to be a force of good.	1 – Strongly Disagree 2 – Disagree 3 – Slightly Disagree 4 – Neutral 5 – Slightly Agree 6 – Agree 7 – Strongly Agree
Empathy	Empathy Scale [76,77]	13	.87	[<i>Perspective Taking</i>] Before criticizing somebody, I try to imagine how I would feel if I were in their place [<i>Empathic Concern</i>] I often feel concerned for people who are less fortunate than me [<i>Empathic Motivation/Compassion</i>] It is important to me to help people who are less fortunate	1 – Strongly Disagree 2 – Disagree 3 – Uncertain 4 – Agree 5 – Strongly Agree

Note. ^a Items were adapted to be more appropriate for children. ^b Our measure of prosocial impact contained three items. However, the item “I try to make a difference” reduced scale reliability to unacceptable levels ($\alpha = .68$). We removed the problematic item and conducted our analyses with the shortened, more reliable scale.

iGen experiences and meaning

We captured students' experiences and perspectives about interacting with the Elders of iGen on several measures. Specifically, students indicated which activities they regularly completed with the Elders from a list of five options (e.g., conversation, games/puzzles, art) and how often they did each of these activities during a regular week. The list of activities was generated in partnership with the director of iGen to be the most common activities that students could engage in during iGen, but students also had the option to list and report on the time they spent engaging in other activities. Students also reported how much time they spent having conversations with Elders on a regular school day using a single face-valid item. Critically, to capture students' perspectives about their time spent with the Elders, students reported how meaningful they found their conversations, activities, and experiences with the Elders across 12 items [66]. Specifically, students rated how valuable and precious these experiences were and to what extent they played an important role in some broader picture. Next, students completed several face-valid items assessing how many lasting friendships they made with the Elders during the year, how interested they were in their experiences with the Elders, and their general impressions of the overall program (see Table 1). Finally, students completed three open-ended questions where they could describe whether and how participating in iGen changed the way they lived their lives or think about others—both generally and during the COVID-19 pandemic. These qualitative data are beyond the scope of the present analyses and will thus not be discussed in further detail here.

Well-being and positive psychological functioning

Students rated their well-being and positive psychological functioning on several validated measures. To capture well-being, students reported their life satisfaction, using both a

single-item measure [67] and across nine items adapted from the Student's Life Satisfaction Scale [68]; we report the analyses on both the single item and on the average of the SLSS items separately. Additionally, students rated their current vitality using six items adapted from the Subjective Vitality Scale [69]. Students also completed several measures of positive psychological functioning. Specifically, students reported their feelings of self-worth on the 10-item Rosenberg Self-Esteem Scale [70] and their sense of social-connectedness on the 10-item [71]. Additionally, students rated their sense of self-efficacy and optimism using nine items from the Resilience Scale [72] and four items from the Life Orientation Scale-Revised [73], respectively.

Intentions to engage in prosocial action

To assess whether students' experiences and sense of meaning from iGen predicted greater prosocial intentions, we measured students' intentions to perform four prosocial acts in the future. Specifically, students rated the likelihood that they would: (1) keep engaged with Elders in their community, (2) volunteer their time, (3) donate to charity, or (4) give gifts to others in the future; these face-valid items were averaged to create an overall index of future prosocial intentions. We also evaluated students' prosocial identity—the extent to which they viewed themselves as people who care about and act in ways that benefit others – with 10 items adapted from the Moral Identity Scale (e.g., “*I am helpful*,” [74]). Moreover, we assessed student's sense of prosocial impact – their desire to help others in a meaningful way— using three items adapted from the Perceived Prosocial Impact scale [75]. Finally, we measured cognitive and affective levels of students' empathy, which we averaged across the 13 items to create an overall index of empathy. Specifically, students rated their general tendency to take the

perspectives of others and show concern for others' emotions and well-being [76] in addition to their motivations to improve others' well-being over the past school year [77].

Statistical analysis

We used *SPSS* (Version 25) [78] to perform our correlational analyses and one-sample *t*-tests described below; we used two-tailed tests and the standard threshold for significance ($\alpha = .05$). We tested the assumption of bivariate normality by visually inspecting the Q-Q plots of the marginal distributions of our key variables and by utilizing the Shapiro-Wilk test of normality. Given that violations of normality do not inflate Type I error but can reduce statistical power when using Pearson correlations, when we encountered evidence of nonnormality, we followed recommended practice and estimated correlations using bootstrapping with 1,000 resamples and bias-corrected accelerated confidence intervals [79,80]. Visual inspection of scatterplots revealed no evidence of non-linearity nor heteroscedasticity. Finally, we visually probed for potential outliers in our data using boxplots and report our results both with and without outliers.

Results

All data and code for Study 1 are available on the OSF at:

https://osf.io/qb9gu/?view_only=d67c0b49a1514ef9990a76fd2f89ff35.

iGen activities

First, we examined the extent to which students engaged in close and continued intergenerational contact throughout the school year (see Table 2 for descriptive statistics on these and all other measures). On average, students reported that they engaged in between three to four activities with the Elders during a regular week of the iGen program ($M = 3.54$; $SD = 1.67$). Students spent much of their time in conversation with Elders. Indeed, students reported

engaging in conversations with Elders approximately five times during a regular week ($M = 4.91$; $SD = 1.14$) and spending some to most of their time on any regular school day having conversations with Elders ($M = 2.33$; $SD = .55$). Beyond simple conversation, students tended to read stories with Elders between two and three times a week ($M = 2.52$; $SD = 2.30$) and engage in various activities (e.g., playing games/puzzles, doing art, engaging in music and dance) between one and two times a week (see Table 2). Thus, the iGen program regularly facilitated close and active contact between students and Elders each week of the program.

Table 2. Item Means and Bivariate Correlations Between Predictors and Well-Being Outcomes.

	Mean (SD)	Meaning from conversations, activities, and experiences with elders ^a 1 – Not at all 7 – Very much	Number of Friendships ^a	Engagement in activities (Sum) Max. 6	Engagement in activities (Time) 0 – Not at all 6 – 6+ times/week
Life Satisfaction (Single-item) ^a 0 – Dissatisfied 10 – Satisfied	7.92 (1.89)	.54**	.31	.01	.35
Life Satisfaction (SLSS) 1 – Never 4 – Almost always	3.26 (.47)	.34	.13	.20	.20
Vitality 1 – Strongly Disagree 7 – Strongly Agree	5.18 (1.18)	.64***	.21	.21	.41*
Self-worth 1 – Strongly Disagree 4 – Strongly Agree	2.91 (.38)	.60**	-.06	.11	.32
Social Connection 1 – Not at all true 5 – Always true	3.89 (.66)	.58**	.18	.10	.50**
Optimism 1 – Strongly Disagree 4 – Strongly Agree	2.76 (.60)	.52*	.13	.28	.41*
Self-efficacy ^a 1 – Not at all 7 – Extremely	5.24 (1.15)	.73***	-.20	.05	.41 [†]

Table 2. (Cont.) Item Means and Bivariate Correlations Between Predictors and Well-Being Outcomes.

	Mean (SD)	Meaning from conversations, activities, and experiences with elders^a 1 – Not at all 7 – Very much	Number of Friendships^a	Engagement in activities (Sum) Max. 6	Engagement in activities (Time) 0 – Not at all 6 – 6+ times/week
Prosocial impact^a 1 – Strongly Disagree 7 – Strongly Agree	6.04 (.78)	.76^{***}	.01	.41 [†]	.38 [†]
Prosocial identity^a 1 – Not at all 7 – Very much	6.00 (.81)	.84^{***}	.16	.15	.47[*]
Empathy 1 – Strongly Disagree 5 – Strongly Agree	4.09 (.50)	.59^{**}	.15	.14	.34
Future prosocial behavior^a 1 – Not at all 7 – Very much	6.01 (.87)	.73^{***}	-.02	.07	.46[*]
Mean (SD)		5.71 (1.18)	4.58 (3.20)	3.54 (1.67)	1.98 (.89)

Note. ^a Variables with a superscript (^a) indicate the presence of significant nonnormality (W s > .878, ps < .032); bootstrapping techniques with 1,000 resamples were used to estimate correlation coefficients in the presence of nonnormal data. All bias-corrected accelerated 95% confidence intervals aligned with the interpretations provided by the p -values and are thus not included in this table. [†] p < .10; ^{*} p < .05; ^{**} p < .01; ^{***} p < .001. Engagement in activities (sum) is equal to the total number of different activities students engaged in regularly with elders. Bolded means are significantly different from scale midpoint.

iGen perceptions and experiences of meaning

Given that iGen encouraged close and continued intergenerational contact, we next examined students' perceptions about their experiences, conversations, and activities with Elders. Overall, students reported having a very positive experience participating in iGen. On average, students reported being very interested in their conversations and activities with Elders ($M = 6.21$; $SD = .58$) and that they made between four and five long lasting friendships with Elders ($M = 4.58$; $SD = 3.20$). Critically, students reported that they felt their conversations, experiences, and activities with Elders to be highly meaningful ($M = 5.71$, $SD = 1.18$). Indeed, a one-sample t -test revealed that students reported levels of meaning that were significantly above the midpoint of the scale, $t(23) = 7.12$, $p < .001$. Despite the overall high levels of meaning expressed by students, bivariate correlation analyses suggested that the more time that students spent engaged in activities with Elders, the more meaningful they reported their experiences to be, $r(21) = .56$, $p = .006$ (see Table 3). Taken together, these results suggest that students perceived their experiences in iGen to be highly positive and meaningful, and that the more engaged they were with the program, the more rewarding it was perceived to be.

Table 3. Bivariate correlations between predictors

	Meaning from conversations, activities, and experiences with Elders ^a	Number of Friendships ^a	Engagement in activities (Sum)	Engagement in activities (Time)
Meaning from conversations, activities, and experiences with Elders ^a	1			
Number of Friendships ^a	.15	1		
Engagement in activities (Sum)	.21	.38 [†]	1	
Engagement in activities (Time)	.56^{**}	.45[*]	.61^{**}	1

Note. ^a Variables with a superscript (^a) indicate the presence of significant nonnormality ($Ws > .856$, $ps < .003$); bootstrapping techniques with 1,000 resamples were used to estimate correlation coefficients in the presence of nonnormal data. All bias-corrected accelerated 95% confidence intervals aligned with the interpretations provided by the p -values and are thus not included in this table. [†] $p < .10$; ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$. Engagement in activities (sum) is equal to the total number of different activities students engaged in regularly with elders. Bolded means are significantly different from scale midpoint

Meaning derived from iGen and well-being

We next tested how students' experiences and perceptions of the iGen program were related to their reported well-being and positive psychological functioning. Overall, students reported very high levels of well-being and positive psychological functioning, with one-sample t -tests showing averages all significantly above the midpoint of the scales (see Table 2). Critically, as shown in Table 2, the meaning that students derived from their experiences in the iGen program was strongly associated with most measures of well-being and positive psychological functioning (rs : .52 – .73); these correlations remained significant when accounting for potential outliers, though the magnitude of the correlations attenuated slightly (rs - .45 – .63). Students who derived more meaning from the program also reported higher levels of

subjective vitality, self-worth, social connection, optimism, and self-efficacy. Interestingly, while we observed a significant correlation between meaning and our single-item measure assessing overall life satisfaction ($r = .54, p = .007$), meaning was not significantly related to life satisfaction as captured by the SLSS ($r = .34, p = .118$). Moreover, when we removed potential outliers, the correlation between meaning and our single-item life satisfaction measure was reduced, $r(20) = .23, p = .303$, possibly due to the reduced sample size. Taken together, these results suggest that engaging in meaningful, close, and continued intergenerational contact may positively shape students' subjective well-being and positive psychological functioning.

Meaning derived from iGen and prosociality

Finally, we tested whether students' experience of meaning in the program predicted higher levels of reported prosociality. As with their well-being reports, students rated themselves very highly on all our measures of prosociality, with averages all significantly above each scale midpoint (see Table 2). Despite the overwhelmingly positive ratings for both the program and students' prosociality, we again found large positive associations between the meaning students derived from the program and their prosociality levels (r s: $.59 - .84$); as above, these correlations remained significant when several potential outliers were removed (r s: $.51 - .64$). Indeed, students who derived more meaning from their experiences with Elders were more likely to want to engage in future prosocial acts like spending time with Elders in their community or donating their time and money to charity ($r = .73, p < .001$). Similarly, students who experienced the greatest meaning from participating in iGen were also more likely to rate themselves as helpful and generous people, to hold greater motivations to help others, and to be more empathetic (see Table 2). Overall, these results are consistent with the hypothesis that regular experiences of

meaningful intergenerational contact can provide potent opportunities to positively shape students' prosociality development.

Discussion

Taken together, the findings from Study 1 suggest that participation in real-world programs, like iGen, that model and facilitate meaningful intergenerational contact between youth and Elders is associated with greater well-being, psychological functioning, and prosocial intentions among youth. Indeed, despite very high levels of well-being and prosociality among iGen students, we observed a positive association between meaningful participation and key outcomes, consistent with the possibility that program engagement could support greater positive psychological functioning. However, the iGen program is an immersive 10-month long program spanning the academic year, which provides youth with several opportunities to foster meaningful connections and practice prosociality.

Could participation in a shorter prosocial program also boost well-being?

To examine this question, we assessed happiness before and after youth spent two hours volunteering in a C2C Giving Factory, where they packaged essential items for a local child living in poverty. Critically, child volunteers were randomly assigned to either prepare a package for a similar child (i.e., someone of their gender and similar age) or a less similar child (i.e., someone several years older or younger and/or a different gender). This design allowed us to investigate two key questions. First, we could examine whether youth reported any change in happiness from before to after engaging in a relatively brief, real-world act of generosity. Second, we could probe whether their giving to a similar (vs. dissimilar) other was associated with greater happiness gains.

Study 2: Cradles to Crayons (C2C)

Materials and methods

Program description

Cradles to Crayons (C2C) provides essential items (e.g., shoes, books, clothing, supply packs) to disadvantaged children from birth to 12 years old. Items are packaged by volunteers during 2-hour shifts at C2C warehouses, known as “Giving Factories.” Children as young as five years old can volunteer in Giving Factories, which are located in Boston, Chicago, and Philadelphia (USA).

Participants and procedure

Between June 2018 and August 2019, 257 children participated in the study during their visit to C2C (54% female; $M_{\text{Age}} = 8.70$ years; $SD_{\text{Age}} = 2.$, range = 4 – 13). In line with our pre-registered exclusion criteria, we excluded seven children for not reporting their pre- or post-volunteering happiness; an additional 11 children were excluded because their permission forms could not be verified. After removing these 18 participants, we were left with a final sample of 238 children (55% female; $M_{\text{Age}} = 8.65$ years; $SD_{\text{Age}} = 2.07$, range = 5 – 12). Our planned sample size was $N = 630$ with an interim analysis at $N = 400$ to detect a small effect (Cohen’s $d = .20$) with 80% power using a one-tailed, independent samples t -test at $\alpha = .05$. However, data collection in 2020 was disrupted by COVID-19. We registered an update on the OSF that that our final sample was $N = 239$. However, we failed to notice until after posting the document that one of the participants had only been four years of age and thus was ineligible to volunteer in the Giving Factory; excluding this participant left us with a sample of $N = 238$. Procedural details

and analytical plans for this study were pre-registered on the OSF at:

https://osf.io/kjvsw/?view_only=1a86becc5f3b42fa8cb311c837e98b19.

Upon arriving to the C2C Giving Factory, participants received an orientation from C2C staff members to learn how to inspect, sort, and package donations and to learn more about the study. During the orientation, children were familiarized with a six-point scale used to rate feelings of happiness (see Fig. 1). The scale ranged from “really not happy”—represented by a large frowning face and the number one—to “really happy”—represented by a large smiling face and the number six; see OSF for sample script used to explain the scale. Following the orientation, children were given a printed version of the happiness scale and were asked to indicate their pre-volunteering happiness (i.e., “How do you feel right now?”).

Fig. 1 Scale Used to Capture Momentary Happiness Before and After Volunteering at Cradles to Crayons (C2C) Giving Factory (Study 2).

Participants were then randomly assigned to either one of two conditions: The *Similar Recipient* condition ($n = 95$; 51% female; $M_{\text{Age}} = 8.32$ years; $SD_{\text{Age}} = 2.11$, range = 5-12) or the *Dissimilar Recipient* condition ($n = 143$; 58% female; $M_{\text{Age}} = 8.87$ years; $SD_{\text{Age}} = 2.01$, range = 5-12). In the *Similar Recipient* condition, participants were asked to prepare a package for a child of the same-gender and within two years of the participant’s age. Meanwhile, in the *Dissimilar Recipient* condition, participants were asked to prepare a package for a child who was a different gender and/or more than two years older or younger than the participant. Participants received a packing slip that introduced the recipient (i.e., recipient’s name, age, gender, zip code, and caregiver’s name) and then packaged the requested items (e.g., size 7 everyday shoes, books,

hygiene kit, art supply pack). Afterwards, children indicated their post-volunteering happiness on a second printed version of the same happiness scale (see Fig. 1).

Finally, participants were asked if they wanted to visit C2C again (yes or no), if they remembered the gender and age of their recipient, and if they know someone like the child on their form (yes or no). The caregivers of pre-literate children read each of the last three questions to the participant and recorded the child's initial response without additional prompts or questions.

Hypotheses and deviation from pre-registration

We pre-registered two main predictions. First, we preregistered that children's reported happiness would increase from pre-intervention to post-intervention. Critically, we predicted that this increase in happiness would be greatest for volunteers assigned to the *Similar Recipient* condition (i.e., children who packaged items for recipients similar in age and gender) than volunteers assigned to the *Dissimilar Recipient* condition (i.e., children who packaged items for recipients of a different gender and larger age difference). To test whether changes in happiness differed by condition, we preregistered two complementary analyses using one-tailed tests. Specifically, we indicated that we would regress participants' post-intervention happiness reports on condition (0 = *Dissimilar Recipient* condition; 1 = *Similar Recipient* condition) while controlling for participants' pre-intervention happiness to see whether any changes in happiness depended upon condition. Further, we pre-registered that we would conduct an independent samples *t*-test to examine whether post-intervention happiness would be greater for participants in the *Similar Recipient* condition as compared to participants in the *Dissimilar Recipient* condition. However, since finalizing our pre-registration, we have learned that a Repeated Measures ANOVA would be a more robust analytic strategy to assess whether the average rate of

change in happiness from pre- to post-intervention differed by condition. Thus, where applicable, we report the findings from these additional tests alongside our pre-registered analysis plan.

Second, we pre-registered predictions that children would be more willing to volunteer at C2C again when selecting items for a similar (vs. dissimilar) recipient. Moreover, we pre-registered to examine whether willingness to volunteer again depended upon condition assignment, post-intervention happiness, and/or indices of demographic similarity between the participant and recipient (i.e., age, gender). However, upon examination of the data, 99% of participants ($N = 232$) indicated that they were willing to return to C2C in the future. As such, we do not report these analyses here given the lack of variability in responses.

Statistical analysis

We used *SPSS* (Version 25) [78] to perform our analyses; we used one-tailed tests for directional hypotheses, two-tailed tests for non-directional hypotheses, and the standard threshold for significance across tests ($\alpha = .05$). We tested for normality of our variables and model residuals by visually inspecting Q-Q plots and utilizing the Kolmogorov-Smirnov tests of normality. Given that paired-samples *t*-tests, OLS regression analyses, and repeated measures ANOVAs are generally robust to violations of normality [81], we did not perform any transformations on our data when we found evidence of nonnormality. Visual inspection of scatterplots revealed no evidence of non-linearity nor heteroscedasticity. Finally, we visually probed for potential outliers in our data using boxplots. In our OLS regression, we additionally probed for outliers in our outcome by comparing externally studentized residuals against a critical value associated with a $t(236)$ distribution and looked for potential globally influential outliers by examining DFFITS and DFBETAS against a critical value of one [82]. Removing

potential outliers did not change the interpretation of results, thus we report the analyses including the full sample to maximize statistical power.

Results

All data and code for Study 1 are available on the OSF at:

https://osf.io/kjvsw/?view_only=1a86becc5f3b42fa8cb311c837e98b19.

Preregistered analyses

As pre-registered, we first tested whether participants' self-reported happiness increased from pre-intervention to post-intervention for the overall sample and within each condition separately. As predicted, a series of paired samples *t*-tests revealed that children's self-reported happiness increased from pre-volunteering ($M = 5.18$, $SD = .83$) to post-volunteering ($M = 5.63$, $SD = .56$), $t(237) = 9.32$, $p < .001$, $d_p = .63$, 95% CI [.49, .77]. The happiness boost was observed in both the *Dissimilar Recipient* condition, $t(142) = 7.54$, $p < .001$, $d_p = .69$, 95% CI [.49, .89], and the *Similar Recipient* condition, $t(94) = 5.47$, $p < .001$, $d_p = .54$, 95% CI [.33, .75]; see Fig. 2. Thus, it appears that spending time packaging essential items for a disadvantaged child—whether they be similar or dissimilar to one's identity—may boost children's happiness. While this result is consistent with past work, we did not include a non-prosocial activity control group in our design, thus we cannot rule out the possibility that children simply became happier over time (see General Discussion).

Fig. 2 Self-Reported Happiness Before and After Packaging Items for Similar or Dissimilar Children at The Cradles to Crayons (C2C) Giving Factory. *Note.* *** $p < .001$; *ns* = non-significant. Error bars represent standard errors.

We next tested our prediction that the change in happiness from pre-intervention to post-intervention would be greater for participants in the *Similar Recipient* condition as compared to the *Dissimilar Recipient* condition. In contrast to our directional prediction, regression analyses revealed that condition did not predict post-intervention happiness while holding pre-intervention happiness constant, $b = -.09$, $SE = .06$, 90% CI = $[-.20, .02]$, $\beta = -.08$, 90% CI $[-.19, .02]$, $t(235) = -1.43$, $p = .923$. Similarly, independent t -test analyses revealed no significant mean differences in post-volunteering happiness between participants in the *Similar Recipient* ($M = 5.57$, $SD = .60$) and *Dissimilar Recipient* conditions ($M = 5.66$, $SD = .53$), $t(185.98) = 1.27$, $p = .897$, $d = .17$, 90% CI $[-.05, .39]$. Finally, converging with the former two tests, a repeated measures ANOVA revealed that the mean change in happiness from pre- to post-intervention did not differ by condition, $F(1, 236) = .75$, $p = .389$, $\eta_p^2 = .00$, 90%CI $[-.00, .03]$. The findings across each of these tests suggest that being assigned to package essential items for a recipient of similar age and gender provided no greater emotional benefits for children than packaging items for a dissimilar recipient.

Broadly, the previous analyses focused on examining how being assigned to give to similar (vs. dissimilar) recipients impacted children's post-intervention happiness. However, whereas participants in the *Similar Recipient* condition were always the same gender and aged within two years of each other, participants in the *Dissimilar Recipient* condition could differ from the recipient in terms of gender, age, or on both dimensions. Thus, we also pre-registered our intention to examine whether changes in happiness from pre- to post-intervention differed as a function of more nuanced conceptualizations of dissimilarity. Specifically, we explored whether the change in pre- to post-volunteering happiness was related to either a match or mismatch in self-reported gender and/or three different operationalizations of age difference: (1)

the absolute difference in age between participant and recipient, (2) whether the recipient was older or younger than the participant, and (3) whether the participant and recipient were the same age, similar in age ($\pm$ one year), or disparate in age ($\pm$ two or more years). We found no consistent evidence across various tests and various analytic strategies testing whether the more nuanced conceptualizations of similarity (vs. dissimilarity) predicted greater post-volunteering happiness (see S1 Table in the Supporting Information for details). Taken together, these findings coincide with the above analyses and (contrary to our predictions) suggest that volunteering to help a dissimilar recipient was just as emotionally rewarding for children as volunteering to help a recipient like themselves.

Discussion

Converging with the results from Study 1 and past lab work [e.g., 2,4], the findings of Study 2 suggest that school-aged children who participated in a community-based prosocial program reported increases in subjective well-being from before to after the task. In contrast to our pre-registered predictions, we found no evidence that volunteering at C2C was more rewarding when children packaged essential items for a disadvantaged child of similar rather than dissimilar gender and/or age.

General discussion

Across two studies, we examined whether two real-world prosociality programs were associated with greater psychological well-being in children. Using both a correlational survey and a pre-registered experiment, we saw converging evidence supporting this hypothesis. Notably, involvement in each program predicted greater well-being despite differences in how much time children spent engaging in prosocial action—from a single afternoon to across an entire school year.

The present findings align with previous research demonstrating the psychological benefits of engaging in prosocial behavior [2–4]. As such, it is possible that previous research may generalize to real-world contexts despite the literature’s prioritization of internal over external validity. Given the scientific community’s recent push to conduct more generalizable research and to collect larger samples [e.g., 79–82], the present work underscores the importance of testing questions in real-world community settings. Indeed, the present work contributes to efforts encouraging more rigorous, generalizable research examining the emotional benefits of prosocial behavior in the real world but additional research is needed.

Study 1 was designed to examine an immersive program that created a long-term, in-depth experience for school-aged children to develop their prosociality. Of course, the immersive nature of the program limits its capacity to only 25 students a year, which makes conducting a well-powered experiment on this program with a representative group of students particularly challenging. As a result, Study 1 relied on a correlational design and a small, unrepresentative sample, meaning we cannot determine whether participating in iGen *causes* changes in psychological well-being, nor can we eliminate possible self-selection biases or determine if these results generalize to children of various socio-demographic contexts.

Happier and more helpful students may be more likely to enroll in prosocial programs, like iGen, and our data suggest that this may be the case. Students in Study 1 reported high levels of prosociality and well-being that were significantly above the midpoint of the scales. However, it is important to note that the iGen program attracts significant attention from the Saskatoon community, with ~150 applicants annually for only 25 spots. Thus, the sample may reflect the interests and well-being of the larger and broader applicant pool. Moreover, it is encouraging to see that levels of engagement with and meaning derived from participating in iGen the program

predicted psychological well-being, even among this sample reporting high levels of well-being. This finding is notable given that the restricted range and variability on our measures are likely to reduce the possibility of detecting statistically significant associations.

Critically, future work may capitalize on the natural experimental context provided by iGen's lottery selection process. Specifically, researchers could broadly survey students across the school district—including those randomly selected to participate in iGen, those who applied but were not selected, and those who did not apply to iGen at all—both before and after the iGen program. This would enable a causal test of program participation and better account for self-selection biases.

In Study 2, we were able to avoid some of the limitations of Study 1 by conducting a pre-registered experiment with a much larger sample. Despite these methodological advantages, the experimental design did not include a control condition to help eliminate important alternative explanations. Indeed, in Study 2, there was an increase in happiness across both conditions from before to after preparing gifts for needy youth. It is difficult to rule out the possibility that this increase in happiness is simply be due to the passage of time; it could be that children are getting happier over the course of their afternoon together. For example, other studies have noted an increase in children's well-being from pre- to post-assessment both among students who engaged in kind acts and an active control condition and thus fail to demonstrate that any gains in well-being are due to prosocial action [e.g., 29]. Thus, future researchers would do well to include a control condition in which children perform a non-generous task as participants in the other condition packaged gifts for deserving children in the community. That being said, the findings of Study 2 do align with previous work which suggests that people tend to feel happier after

prosocial acts [e.g., 2–4], so it is plausible that giving to a range of disadvantaged recipients could boost happiness.

Interestingly, despite work suggesting that helping similar others may be perceived as more emotionally rewarding [e.g., 62], our data suggest that there may be no discernable advantage to helping similar over dissimilar others. Indeed, as evidenced by the null effect in Study 2, those who helped others of the same age and gender reported similar levels of post-helping happiness and similar increases in happiness as those who helped someone unlike them in age and gender. These results challenge people's intuitions that giving to similar others may be more rewarding. This is important because people in need may appear to be quite different from potential helpers [e.g., 83–85]. Critically, this work aligns broadly with the concept of bridging social capital which suggests that it is possible that giving to people who are socio-demographically dissimilar may be emotionally rewarding [e.g., 63–66].

Just as field work examining prosociality-focused interventions can advance underlying theories of prosociality development and psychological well-being, the present work also underscores the practical importance of performing real-world investigations. Indeed, scientific practice would do well to continue to go beyond the lab and evaluate the value of real-world programs already in the community. For example, data show that parents, teachers, and communities broadly are interested in fostering prosociality and want their children to be happy [90]. Thus, examining prosociality-focused programs for primary school-aged children, such as iGen and C2C, can offer valuable guidance to communities and—to the extent that the present findings align with past work—help communities leverage these programs to both nurture prosociality and enhance the psychological well-being of the next generation.

To the extent that these findings are replicable with rigorous methods, the present field work can also provide initial information to practitioners to better understand the value of their programs, particularly in light of the extreme temporal and financial costs often associated with prosociality-focused interventions [e.g., 43,48,87–89]. For example, the immersive, long-term nature of iGen requires a lot of careful management, despite using essentially the same teaching and caring resources that would be needed if there were no mixing of elder care and education. Moreover, educational ministries and school and long-term care home administrators must also consider the safety and feasibility of hosting Intergenerational programs. Indeed, while programs such as iGen may be impactful and popular, there may be practical challenges to making such programs available more widely in school systems. Thus, evidence of the sort we reported here can strengthen the case for program expansion. On the other hand, given the relatively low time and financial costs associated with the C2C program, it may be much more amenable to concept of scalability; it can accommodate dozens of children in an afternoon. Although C2C may not be as immersive as iGen, it may produce momentary benefits that motivate further prosociality. Indeed, to the extent that the positive feelings associated with giving to others reinforce the practice of giving, past work suggests that children may be motivated to recreate those feelings and either return to the Giving Factory or initiate other forms of prosociality in a positive feedback loop [3,94].

Conclusion

Encouraging the next generation to be more prosocial and happy are often desirable goals for people and nations around the world [e.g., 91–93]. But people often have little direction on how to achieve these large, amorphous goals. Past work conducted in the lab offers internally valid evidence that helping others can boost happiness for very young children and adults [e.g.,

6]. Meanwhile, a host of real-world, often costly programs exist in which communities try to develop prosociality in children, but data are rarely collected in these real-world community settings or with school-aged children. The present studies examine very different programs that together help to show how lab-based results may generalize to the real-world and how real-world programs can inform lab-based experiments.

References

1. Penner LA, Dovidio JF, Piliavin JA, Schroeder DA. Prosocial behavior: Multilevel perspectives. *Annu Rev Psychol.* 2005;56:365–92.
2. Aknin LB, Hamlin JK, Dunn EW. Giving leads to happiness in young children. *PloS One.* 2012;7(6):e39211.
3. Aknin LB, Van de Vondervoort JW, Hamlin JK. Positive feelings reward and promote prosocial behavior. *Curr Opin Psychol.* 2018;20:55–9.
4. Aknin LB, Dunn EW, Proulx J, Lok I, Norton MI. Does spending money on others promote happiness?: A registered replication report. *J Pers Soc Psychol.* 2020;119(2):e15–26.
5. Curry OS, Rowland LA, Van Lissa CJ, Zlotowitz S, McAlaney J, Whitehouse H. Happy to help? A systematic review and meta-analysis of the effects of performing acts of kindness on the well-being of the actor. *J Exp Soc Psychol.* 2018;76:320–9.
6. Aknin LB, Whillans AV, Norton MI, Dunn EW. Happiness and prosocial behavior: An evaluation of the evidence. [Internet]. New York: Sustainable Development Solutions Network; 2019. (Helliwell JF, Layard R, Sachs J, editors. *World Happiness Report 2019*). Available from: <https://worldhappiness.report/ed/2019/happiness-and-prosocial-behavior-an-evaluation-of-the-evidence/>
7. Aknin LB, Whillans AV. Helping and happiness: A review and guide for public policy. *Soc Issues Policy Rev.* 2021;15(1):3–34.
8. Hui BPH, Ng JCK, Berzaghi E, Cunningham-Amos LA, Kogan A. Rewards of kindness? A meta-analysis of the link between prosociality and well-being. *Psychol Bull.* 2020;146(12):1084–116.
9. Song Y, Broekhuizen ML, Dubas JS. Happy little benefactor: Prosocial behaviors promote happiness in young children from two cultures. *Front Psychol.* 2020;11:1398–1398.
10. Hepach R, Vaish A, Grossmann T, Tomasello M. Young children want to see others get the help they need. *Child Dev.* 2016;87(6):1703–14.
11. Hepach R, Vaish A, Tomasello M. Young children are intrinsically motivated to see others helped. *Psychol Sci.* 2012;23(9):967–72.
12. Hamlin JK. Moral judgment and action in preverbal infants and toddlers: Evidence for an innate moral core. *Curr Dir Psychol Sci.* 2013;22(3):186–93.
13. Warneken F, Tomasello M. Altruistic helping in human infants and young chimpanzees. *Science.* 2006;311(5765):1301–3.
14. Dunfield K, Kuhlmeier VA, O’Connell L, Kelley E. Examining the diversity of prosocial behavior: Helping, sharing, and comforting in infancy. *Infancy.* 2011;16(3):227–47.

15. House BR, Silk JB, Henrich J, Barrett HC, Scelza BA, Boyette AH, et al. Ontogeny of prosocial behavior across diverse societies. *Proc Natl Acad Sci.* 2013;110(36):14586–91.
16. Chudek M, Henrich J. Culture–gene coevolution, norm-psychology and the emergence of human prosociality. *Trends Cogn Sci.* 2011;15(5):218–26.
17. House BR, Kanngiesser P, Barrett HC, Broesch T, Cebioglu S, Crittenden AN, et al. Universal norm psychology leads to societal diversity in prosocial behaviour and development. *Nat Hum Behav.* 2020;4(1):36–44.
18. Richerson P, Baldini R, Bell AV, Demps K, Frost K, Hillis V, et al. Cultural group selection plays an essential role in explaining human cooperation: A sketch of the evidence. *Behav Brain Sci.* 2016;39.
19. Steinberg L, Morris AS. Adolescent development. *Annu Rev Psychol.* 2001;52(1):83–110.
20. Zimmer-Gembeck MJ, Collins WA. Autonomy development during adolescence. In: *Blackwell Handbook of Adolescence* [Internet]. John Wiley & Sons, Ltd; 2006 [cited 2021 Jun 1]. p. 174–204. Available from: <https://onlinelibrary.wiley.com/doi/abs/10.1002/9780470756607.ch9>
21. Smetana JG. Toddlers’ social interactions in the context of moral and conventional transgressions in the home. *Dev Psychol.* 1989;25(4):499–508.
22. Steinberg L. Adolescent risk taking: A social neuroscience perspective. In: *Adolescent Vulnerabilities and Opportunities: Developmental and Constructivist Perspectives* [Internet]. Cambridge University Press; 2011. p. 41–64. (Amsel E, Smetana J, editors. *Adolescent Vulnerabilities and Opportunities: Developmental and Constructivist Perspectives*). Available from: <https://doi.org/https://doi.org/10.1017/CBO9781139042819.005>
23. Steinberg L, Dahl R, Keating D, Kupfer DJ, Masten AS, Pine DS. The study of developmental psychopathology in adolescence: Integrating affective neuroscience with the study of context. In: Cicchetti D, Cohen DJ, editors. *Developmental psychopathology: Developmental neuroscience* [Internet]. John Wiley & Sons Inc.; 2006. p. 710–41. Available from: <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9780470939390#page=723>
24. Van der Graaff J, Branje S, De Wied M, Hawk S, Van Lier P, Meeus W. Perspective taking and empathic concern in adolescence: gender differences in developmental changes. *Dev Psychol.* 2014;50(3):881–8.
25. Wentzel KR. Prosocial behavior and peer relations in adolescence. In: *Prosocial development: A multidimensional approach*. New York, NY, US: Oxford University Press; 2014. p. 178–200.
26. Carlo G, Crockett LJ, Wolff JM, Beal SJ. The role of emotional reactivity, self-regulation, and puberty in adolescents’ prosocial behaviors. *Soc Dev.* 2012;21(4):667–85.

27. Fabes RA, Carlo G, Kupanoff K, Laible D. Early adolescence and prosocial/moral behavior I: The role of individual processes. *J Early Adolesc.* 1999;19(1):5–16.
28. Eisenberg N, Hofer C, Vaughan J. Effortful control and its socioemotional consequences. In: *Handbook of emotion regulation*. New York, NY, US: The Guilford Press; 2007. p. 287–306.
29. Layous K, Nelson SK, Oberle E, Schonert-Reichl KA, Lyubomirsky S. Kindness counts: prompting prosocial behavior in preadolescents boosts peer acceptance and well-being. *PLoS One.* 2012;7(12):e51380.
30. Binfet JT, Whitehead J. The effect of engagement in a kindness intervention on adolescents' well-being: A randomized controlled trial. *Int J Emot Educ.* 2019;11(2):33–49.
31. Padilla-Walker LM, Carlo G. *Prosocial development: A multidimensional approach*. New York, NY, US: Oxford University Press; 2014. (Prosocial development: A multidimensional approach).
32. Schacter HL, Margolin G. When it feels good to give: Depressive symptoms, daily prosocial behavior, and adolescent mood. *Emotion.* 2019;19(5):923–7.
33. Schonert-Reichl KA, Whitehead Arruda J. Evaluating the effectiveness of the random acts of kindness program in elementary school children: A randomized controlled trial 2014–2015. [Internet]. 2016. Available from: https://assets.randomactsofkindness.org/downloads/RAK_UBC_Executive_Summary_Report.pdf
34. Son D, Padilla-Walker LM. Happy helpers: A multidimensional and mixed-method approach to prosocial behavior and its effects on friendship quality, mental health, and well-being during adolescence. *J Happiness Stud.* 2020;21(5):1705–23.
35. Su T, Tian L, Huebner ES. The reciprocal relations among prosocial behavior, satisfaction of relatedness needs at school, and subjective well-being in school: A three-wave cross-lagged study among Chinese elementary school students. *Curr Psychol* [Internet]. 2019 [cited 2021 Jun 12]; Available from: <https://doi.org/10.1007/s12144-019-00323-9>
36. Tashjian SM, Rahal D, Karan M, Eisenberger N, Galván A, Cole SW, et al. Evidence from a randomized controlled trial that altruism moderates the effect of prosocial acts on adolescent well-being. *J Youth Adolesc.* 2021;50(1):29–43.
37. Yang Y, Li P, Fu X, Kou Y. Orientations to happiness and subjective well-being in Chinese adolescents: The roles of prosocial behavior and internet addictive behavior. *J Happiness Stud.* 2017;18(6):1747–62.
38. Bergin C, Talley S, Hamer L. Prosocial behaviours of young adolescents: A focus group study. *J Adolesc.* 2003;26(1):13–32.

39. Radke-Yarrow M, Zahn-Waxler C, Chapman M. Children's prosocial dispositions and behavior. In New York: Wiley; 1983. p. 469–545. (Mussen P, Hetherington EM, editors. *Manual of child psychology*; vols. 4, Socialization, personality, and social development).
40. Berkowitz M, Bier M. What works in character education: A research-driven guide for education. *J Res Character Educ.* 2007;5(1):29–48.
41. Kidron Y, Fleischman S. Promoting adolescents' prosocial behavior. *Educ Leadersh.* 2006;63(7):90–1.
42. Mesurado B, Guerra P, Richaud MC, Rodriguez LM. Effectiveness of prosocial behaviour interventions: A meta-analysis. In: *Psychiatry and neuroscience update*. Dordrecht, Heidelberg, New York, London: Springer; 2019.
43. Taylor RD, Oberle E, Durlak JA, Weissberg RP. Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child Dev.* 2017;88(4):1156–71.
44. Weber PC, Thayer AN. Planting the seeds of civil society: An assessment of philanthropy education in k–12 schools. *J Nonprofit Educ Leadersh.* 2017;7(3):162–81.
45. Giraudeau C, Bailly N. Intergenerational programs: What can school-age children and older people expect from them? A systematic review. *Eur J Ageing.* 2019;16(3):363–76.
46. Baumsteiger R. What the world needs now: An intervention for promoting prosocial behavior. *Basic Appl Soc Psychol.* 2019;41(4):215–29.
47. Benz TA, Piskulich JP, Kim S, Barry M, Havstad JC. Student philanthropy and community engagement: a program evaluation. *Innov High Educ.* 2020;45(1):17–33.
48. Kosse F, Deckers T, Pinger P, Schildberg-Hörisch H, Falk A. The formation of prosociality: Causal evidence on the role of social environment. *J Polit Econ.* 2020;128(2):434–67.
49. Sukys S, Majauskiene D, Dumciene A. The effects of a three-year integrated Olympic education programme on adolescents' prosocial behaviours. *Eur J Sport Sci.* 2017;17(3):335–42.
50. Garaigordobil M. Assessment of the effects of a cooperative play programme for children aged 10–11 years on social adaptation and on the perception that parents, teachers and peers have of children's prosocial behaviours. *J Study Educ Dev.* 2008;31(3):303–18.
51. Connolly P, Miller S, Hanratty J, Roberts J, Sloan S. Protocol for a systematic review: Universal school-based programmes for improving social and emotional outcomes in children aged 3–11 years: a systematic review and meta-analysis. *Campbell Syst Rev.* 2018;14(1):1–39.

52. Durlak JA, Weissberg RP, Dymnicki AB, Taylor RD, Schellinger KB. The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Dev.* 2011;82(1):405–32.
53. Gable SL, Haidt J. What (and why) is positive psychology? *Rev Gen Psychol.* 2005;9(2):103–10.
54. Seligman MEP, Csikszentmihalyi M. Positive psychology: An introduction. *Am Psychol.* 2000;55(1):5–14.
55. Diener E, Oishi S, Tay L. Advances in subjective well-being research. *Nat Hum Behav.* 2018;2(4):253–60.
56. Ciocanel O, Power K, Eriksen A, Gillings K. Effectiveness of positive youth development interventions: A meta-analysis of randomized controlled trials. *J Youth Adolesc.* 2017;46(3):483–504.
57. Seligman MEP, Adler A. Positive education. Dubai: Global Happiness Council; 2018 p. 53–74. (Helliwell JF, Layard R, Sachs J, editors. *Global Happiness Policy Report*).
58. Shoshani A, Steinmetz S, Kanat-Maymon Y. Effects of the Maytiv positive psychology school program on early adolescents' well-being, engagement, and achievement. *J Sch Psychol.* 2016;57:73–92.
59. Leventhal K, Gillham J, DeMaria L, Andrew G, Peabody J, Leventhal S. Building psychosocial assets and wellbeing among adolescent girls: A randomized controlled trial. *J Adolesc.* 2015;45:284–95.
60. Ranganathan P, Pramesh C, Aggarwal R. Common pitfalls in statistical analysis: Intention-to-treat versus per-protocol analysis. *Perspect Clin Res.* 2016;7(3).
61. Weller D, Lagattuta KH. Helping the in-group feels better: Children's judgments and emotion attributions in response to prosocial dilemmas. *Child Dev.* 2013;84(1):253–68.
62. Frey BS. *Happiness: A revolution in economics*. Cambridge, MA, US: MIT Press; 2008. (Happiness: A revolution in economics).
63. Helliwell JF, Putnam RD. The social context of well-being. *Philos Trans Biol Sci.* 2004;359(1449):1435–46.
64. Hwang L-A, Ng JWJ, Vaithilingam S. Social capital and subjective well-being: The mediating role of social networking sites. *First Monday* [Internet]. 2019 [cited 2021 Jun 14];24(10). Available from: <https://firstmonday.org/ojs/index.php/fm/article/view/10130>
65. Putnam RD. *Bowling alone : The collapse and revival of American community*. New York: Simon & Schuster; 2000.

66. Huta V, Ryan RM. Pursuing pleasure or virtue: The differential and overlapping well-being benefits of hedonic and eudaimonic motives. *J Happiness Stud.* 2010;11(6):735–62.
67. Campbell A, Converse PE, Rodgers WL. The quality of American life: Perceptions, evaluations, and satisfactions. New York: Russell Sage Foundation; 1976. (Russell Sage Foundation).
68. Huebner ES. Initial development of the student's life satisfaction scale. *Sch Psychol Int.* 1991;12(3):231–40.
69. Bostic TJ, McGartland Rubio D, Hood M. A validation of the subjective vitality scale using structural equation modeling. *Soc Indic Res.* 2000;52(3):313–24.
70. Rosenberg M. Society and the adolescent self-image. Princeton, NJ: Princeton University Press; 1965. 339 p.
71. Asher SR, Hymel S, Renshaw PD. Loneliness in children. *Child Dev.* 1984;55(4):1456–64.
72. Wagnild GM, Young HM. Development and psychometric evaluation of the resilience scale. *J Nurs Manag.* 1993;1(2):165–78.
73. Scheier MF, Carver CS, Bridges MW. Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *J Pers Soc Psychol.* 1994;67(6):1063–78.
74. Aquino K, Reed II AI. The self-importance of moral identity. *J Pers Soc Psychol.* 2002;83(6):1423–40.
75. Grant AM, Campbell EM, Chen G, Cottone K, Lapedis D, Lee K. Impact and the art of motivation maintenance: The effects of contact with beneficiaries on persistence behavior. *Organ Behav Hum Decis Process.* 2007;103(1):53–67.
76. Davis MH. Measuring individual differences in empathy: Evidence for a multidimensional approach. *J Pers Soc Psychol.* 1983;44(1):113–26.
77. Malin H, Liauw I, Damon W. Purpose and character development in early adolescence. *J Youth Adolesc.* 2017;46(6):1200–15.
78. IBM Corp. IBM SPSS Statistics for Mac. Armonk, NY: IBM Corp; 2017.
79. Lee W-C, Rodgers JL. Bootstrapping correlation coefficients using univariate and bivariate sampling. *Psychol Methods.* 1998;3(1):91–103.
80. Myers JL, Well AD, Jr RFL. Research Design and Statistical Analysis: Third Edition. Routledge; 2013. 821 p.
81. Knief U, Forstmeier W. Violating the normality assumption may be the lesser of two evils. *Behav Res Methods.* 2021;

82. Cohen J, Cohen P, West SG, Aiken LS. Applied multiple regression/correlation analysis for the behavioral sciences. 3rd ed. New York: Routledge; 2002. 536 p.
83. Baldassarri D, Abascal M. Field experiments across the social sciences. *Annu Rev Sociol.* 2017;43(1):41–73.
84. Nosek BA, Hardwicke TE, Moshontz H, Allard A, Corker KS, Almenberg AD, et al. Replicability, Robustness, and Reproducibility in Psychological Science [Internet]. *Annual Review of Psychology*; 2021 [cited 2021 Jun 14]. Available from: <https://psyarxiv.com/ksfvq/>
85. Paluck EL, Cialdini RB. Field research methods. In: *Handbook of research methods in social and personality psychology*, 2nd ed. New York, NY, US: Cambridge University Press; 2014. p. 81–97.
86. Simmons JP, Nelson LD, Simonsohn U. False-positive psychology: Undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychol Sci.* 2011;22(11):1359–66.
87. Bloom P. *Against Empathy: The Case for Rational Compassion*. New York: Harper Collins; 2016.
88. Singer P. *The life you can save*. New York: Random House Trade Paperbacks; 2010.
89. Zaki J. *The War for Kindness: Building Empathy in a Fractured World*. New York: Crown; 2019.
90. Diener ML, Lucas RE. Adults desires for children's emotions across 48 countries: Associations with individual and national characteristics. *J Cross-Cult Psychol.* 2004;35(5):525–47.
91. Belfield C, Bowden AB, Klapp A, Levin H, Shand R, Zander S. The economic value of social and emotional learning. *J Benefit-Cost Anal.* 2015 ed;6(3):508–44.
92. McDougale L, McDonald D, Li H, McIntyre Miller W, Xu C. Can Philanthropy Be Taught? *Nonprofit Volunt Sect Q.* 2017;46(2):330–51.
93. The Philanthropy Lab. What we do [Internet]. 2021 [cited 2021 Jun 1]. Available from: <https://www.thephilanthropylab.org/about/>
94. Aknin LB, Dunn EW, Norton MI. Happiness runs in a circular motion: Evidence for a positive feedback loop between prosocial spending and happiness. *J Happiness Stud Interdiscip Forum Subj Well-Being.* 2012;13(2):347–55.
95. Diener E. Subjective well-being. The science of happiness and a proposal for a national index. *Am Psychol.* 2000;55(1):34–43.

96. Diener E, Tay L, Heintzelman SJ, Kushlev K, Wirtz D, Lutes LD, et al. Findings all psychologists should know from the new science on subjective well-being. *Can Psychol.* 2017;58(2):87–104.
97. Diener E, Seligman MEP. Beyond money: Toward an economy of well-being. *Psychol Sci Public Interest.* 2004;5(1):1–31.

Supporting Information

S1 File. Supporting Information.

S2 Table. Summary of OLS Regression Analyses (Study 2). *Note.* Significant regression coefficients and change in R^2 are in bold. All tests were one-tailed. For one-tailed tests in which the t -value was distributed opposite of the predicted direction, p -values were calculated as follows: $1 - \frac{1}{2} p$ -value.