



Subjective well-being of children and adolescents during the COVID-19 pandemic in Indonesia: two data collections

Ihsana Sabriani Borualogo¹ · Ferran Casas^{2,3}

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Abstract

This paper examines the subjective well-being (SWB) of children and adolescents (10–18 years old) during the COVID-19 pandemic in Indonesia for two periods (May to July 2020 and March to May 2021), using cross-sectional data from two distinct samples of $N = 1,011$ (M age = 14.61) and $N = 1,640$ (M age = 14.86), respectively. Its aims are twofold: (1) to examine the state of SWB among Indonesian children, including its cognitive component (measured using the CW-SWBS), positive affect (PA), and negative affect (NA), and the participants' satisfaction with their contact with friends and how they spend their time; and (2) to compare the evolution of these SWB-related aspects from the first to the second year of the COVID-19 pandemic. Data were collected using Google Forms and convenience and snowball sampling. Results showed that boys displayed significantly higher mean SWB scores than girls, while elementary students displayed significantly higher mean scores for the cognitive component than middle and high school students for both data collection periods. Boys also displayed significantly higher mean PA scores than girls. There were significant school grade differences on PA and NA, depending on the period of study. In the first year of the COVID-19 pandemic, children and adolescents displayed lower scores on satisfaction with their contact with friends than in the second year of the COVID-19 pandemic. These results suggest that children and adolescents adapted to the COVID-19 situation during the second year, and this adaptation protected their SWB from further decrease, as defended by the homeostasis theory.

Keywords Adolescents · Children · COVID-19 · Positive and negative affect · Subjective well-being

On 31 December 2019, the World Health Organization (WHO) received reports of massive casualties in Wuhan, China, caused by pneumonia of an unknown origin (BBC, 2020a). Due to its rapid spread, on 30 January 2020, WHO declared an international public health emergency (BBC, 2020b; WHO, 2020b). WHO found that this disease was caused by the SARS-CoV-2 virus, a new type of coronavirus, and on 11 February 2020, WHO labeled the illness the coronavirus disease 2019 (COVID-19). On 11 March 2020, WHO declared this outbreak a pandemic (WHO, 2020b).

Several studies globally revealed that the COVID-19 pandemic affected not only people's physical health but also their mental health and well-being. A study in Canada on children 9–15 years old ($N = 932$) showed that 37.6% of participants were more bored and 31% of them were more worried than before the pandemic in 2020 (Mitra et al., 2021). Another study in Taiwan showed an extreme prevalence rate (40.9%) of non-suicidal self-injury among adolescents during COVID-19 (Tang et al., 2021; Mitra et al., 2021) also revealed that 49.4% of participants reported changes in emotional state that may contribute to lower subjective well-being (SWB).

Subjective well-being (SWB) refers to “a person's cognitive and affective evaluations of his or her life as a whole” (Diener et al., 2002, p. 187). SWB has the following three characteristics: (1) it is grounded in an individual's perception and evaluation of his/her experiences, (2) it includes positive measures and not only the absence of negative ones, and (3) it includes overall life satisfaction (Diener et al., 2002). Children's SWB is an expansive conceptualization

✉ Ihsana Sabriani Borualogo
ihsana.sabriani@unisba.ac.id

¹ Faculty of Psychology, Universitas Islam Bandung, Bandung, Indonesia

² Doctoral Program on Education and Society, Faculty of Education and Social Sciences, Universidad Andrés Bello, Santiago, Chile

³ Research Institute on Quality of Life, Universitat de Girona, Girona, Spain

of the evaluation (cognitive and affective) of their lives, the circumstances affecting their lives, and the social context in which they live. Thus, it points to their strengths and plays an important role in their positive development (Dinisman & Ben-Arieh, 2015; Savahl et al., 2019). Cognitive evaluation refers to a child's perception of life satisfaction, while affective evaluation refers to positive and negative affect (Diener et al., 2002). Positive affect signifies personal experiences of positive emotional states (e.g., feeling happy, confident, calm, interested), while negative affect refers to personal experiences of negative emotional states (e.g., feeling sad, stressed, bored, lonely, fearful, angry; Snyder & Lopez 2002).

Studies on SWB of children and adolescents before the COVID-19 pandemic have presented interesting findings. Children's engagement with family and friends and children's use of time are important to their SWB (Savahl et al., 2020). Children's use of time explains how they use time in their daily lives and activities (Savahl et al., 2020). Regarding use of time, Lee and Yoo (2017) found that the freedom to choose activities during free time is one of the most important factors for children's SWB. In the context of relationships, positive affect in children's relationships with friends increases children's SWB (Goswami, 2012). Based on these studies of children's SWB, it can be concluded that relationships with friends and use of time are two important factors for children's SWB.

Studies on children's SWB in Indonesia are still limited. While a few studies presented material well-being (Borualogo & Casas, 2021c) and SWB of Indonesian children who experienced being bullied at home and school (Borualogo & Casas, 2021b, d), not many studies have been conducted on this topic in Indonesia during the COVID-19 pandemic (Borualogo & Casas, 2021a). In fact, in mid-2020, Indonesia became the country with the most confirmed COVID-19 cases in Southeast Asia (Nurbaiti, 2020) and reported a high COVID-19 death rate among children (Nurbaiti & Syakriah, 2020).

As the President announced, Indonesia confirmed the first two COVID-19 cases on 2 March 2020 (Gorbiano, 2020). As of 26 March 2020, the Indonesian government reported a total of 893 confirmed cases with 78 deaths and 35 recoveries from across 27 provinces (WHO, 2020a). Since then, cases have increased in Indonesia. As of 1 October 2021, there have been 4,216,728 confirmed cases of COVID-19, with 142,026 deaths (WHO, 2021). As a consequence of this situation, the Education and Culture Minister has called on teachers, parents, and students to stay at home and practice remote learning (Pangestika, 2020). Schools have been closed, and children have experienced changes in their daily life routines. They must stay at home and cannot meet with their friends.

Currently, the COVID-19 pandemic has been in Indonesia for two years. Several Indonesian studies have focused on the effects of the COVID-19 pandemic in the lives of adults. For example, one study reported on the mental health of nurses during the COVID-19 pandemic (Sabir et al., 2021), while another study reported on the role of parents in remote learning activities (Lilawati, 2021). Studies on children during the COVID-19 pandemic in Indonesia have mostly focused on the process of remote learning (Lubis, 2020; Primasari & Zulela, 2021). UNICEF (2020) reported that school closures have affected over 60 million students who study remotely from home.

When the COVID-19 pandemic hit Indonesia in 2020, we conducted a study to investigate children's SWB. A cross-sectional study was planned since we did not expect the COVID-19 pandemic to continue in the next year. However, the COVID-19 pandemic was still affecting Indonesia and countries worldwide in 2021. Therefore, we conducted another cross-sectional study to investigate children's SWB in the second year without a plan to compare the results with the first year. However, the first time we explored data from year 1 and year 2, we identified some interesting results, which we decided to analyze together when comparable. We present our analysis of the two independent data collections as Study 1 and Study 2.

With children confined to home, many are unable to play outside or meet with their friends (UNICEF, 2020). The literature review found limited studies that investigated SWB and quality of life (QoL) of children and adolescents under 18 years old during COVID-19 (Borualogo & Casas, 2021a; de Abreu et al., 2021; Jackson et al., 2021; Mitra et al., 2021). Children and adolescents 10–18 years old ($N = 1,474$) from 29 provinces in Indonesia reported they were bored due to lack of various physical activities, unsatisfied with school closures and with what they learned at home, and unsatisfied with being unable to meet with friends during school closures (Borualogo & Casas, 2021a). A study in Luxembourg, Germany, and Brazil conducted with children 10 to 16 years old revealed that gender was one predictor of individual differences in SWB during COVID-19, girls displaying more vulnerability to the negative impact of the COVID-19 on their SWB, and fear of illness was the strongest factor correlated with emotional well-being (de Abreu et al., 2021). Another study in the United States during the first year of COVID-19 showed that adolescents 10–18 years old who participated in physical activities reported smaller declines in SWB (Jackson et al., 2021), while a study in Canada revealed that having access to friends, playing and exercising indoors and outdoors, and healthy movement behaviors during the COVID-19 pandemic were correlated with a lower likelihood of reporting low SWB (Mitra et al., 2021). These studies all reported children's and adolescents' SWB during the first year of the COVID-19 pandemic.

Regarding the second year of the COVID-19 pandemic, we could not find any studies that reported the effects of the COVID-19 pandemic on children's lives, particularly on children's SWB during two periods of time during COVID-19. The current study, which uses a cross-sectional design, is the first to empirically investigate cognitive and affective components of SWB of children and adolescents during the first and second year of the COVID-19 pandemic and the contribution of satisfaction with contact or communication with friends and use of time to their SWB.

In order to understand how children's SWB is affected by adverse situations such as the COVID-19 pandemic and lockdown, this study uses Cummins' (2014) theory of SWB homeostasis. According to Cummins, SWB is analogous to the homeostatic maintenance of body temperature. SWB is "actively controlled and maintained by automatic neurological and psychological processes" (p. 636). SWB homeostasis aims to uphold a normal positive sense of well-being, considered to be generalized, indiscriminate, and abstract (Cummins, 2014). The homeostatic system for each individual has a controlled set-point range of SWB from 60 to 90 with a mean of 75 when projected onto a 100-point scale, where 0 represents complete dissatisfaction and 100 represents complete satisfaction (Cummins, 2014). Within this range, the normal variation around each set-point is approximately 6% points on either side of its mean (Cummins, 2014). Homeostasis thus endeavors to maintain and preserve SWB within this set-point.

Cummins (2014) explains two processes involved in homeostatic management. One process establishes conditions to minimize the probability of homeostatic failure. The other process uses resources to facilitate recovery after homeostatic failure. Both processes are controlled by an internal buffer, behavior, which can be used to engage or disengage from an emotionally intense situation (Cummins, 2014). People generally disengage from unpleasant situations and engage in pleasant situations. Internal buffers consist of behaviors the person generally adopts to avoid strong challenges by establishing life routines that make daily experiences predictable and manageable (Cummins, 2019). Cummins also explains external buffers that can be used to facilitate homeostasis and maintain stability in the SWB scores, which include money, relationships, and purposeful activity (Cummins, 2014).

Money protects SWB through its capacity as a flexible resource to assist homeostasis by allowing people to minimize the unwanted challenges in their life (Cummins, 2014). For example, to maintain their level of SWB, people can pay others to perform tasks they do not want to do. Cummins (2014) further explains that having more money and becoming a wealthy person cannot create a perpetually happier person because the level of SWB cannot be sustained higher than within the upper half of the person's set-point range.

Money assists homeostasis; however, it is not a proportional guarantee. When people increase their economic resources, their SWB usually does not increase if their income is over some level of wealth. The SWB only increases with an increase of money in the context of a rather poor situation (Coppola, 2013; Easterlin, 1974, 2001). The Easterlin paradox points out "that over time a higher rate of economic growth does not result in a greater increase of happiness" (Easterlin et al., 2010, p. 22,466).

The second external buffer, considered the most powerful one, is interpersonal relationships (Cummins, 2014). Relationships that involve mutual sharing of intimacy and support play an important role in moderating the influence of potential stressors and maintaining the SWB score (Cummins, 2014). Relationships facilitate homeostasis by providing a secure environment (Cummins, 2014).

Purposeful activity is an external buffer regarding the person's active engagement and achievement in life (Cummins, 2014, 2019) explains two ways in which individuals engage in activities that provide purpose in life: (1) taking an active social role in groups with family or friends and (2) engaging in outside employment. For example, when individuals disengage from activities (e.g., losing contact with friends or family or unemployment), their SWB is severely threatened.

This study examines the SWB of children and adolescents (10–18 years old) during the COVID-19 pandemic in Indonesia in two periods: May to July 2020 and March to May 2021. It departs from a broad research question: Was there any change in pattern of Indonesian children's answers to different SWB-related questions from the first year of the COVID-19 pandemic to the second year? Consistently, the aims of this study are twofold: (1) to examine the state of SWB among Indonesian children in two different moments of the pandemic. Cognitive components, such as overall life satisfaction, and affective components, such as positive and negative affect (PA and NA), will be analyzed by gender and school grade. Analysis will be extended to other variables, including satisfaction with their contact and communication with friends and how they spent their time during the COVID-19 lockdown; and (2) comparing the evolution of children's perceptions and evaluations of their life from the first year to the second year of the COVID-19 pandemic. Since this was the first study on this topic, no hypothesis was raised.

Methods

Procedure and ethical approval

Schools have been closed, and there was large-scale social restriction in Indonesia due to COVID-19. Therefore, these two studies were designed as an Internet-based survey. The

studies used similar questionnaires among different participants from the same population in West Java Province, Indonesia, during the COVID-19 pandemic in 2020 and 2021. Data were collected using Google Forms and sent to parents with children from 10 to 18 years old. The research team recruited college students as enumerators in West Java Province. To collect online data, it was easier to reach parents and children through teachers. However, since the study was not school-based research, the research team did not ask for information about the type of school children attended. The enumerators were handed an electronic letter from the research team to send to the school principals or teachers and parents via WhatsApp.

After gaining permission from teachers, enumerators sent a Google Form to teachers and asked them to send the link to parents through WhatsApp groups of parents of students. Teachers informed parents that they were allowed to send the link to parents from other schools. Therefore, in addition to convenience sampling, the study also relied upon a snowball procedure. The research team included informed consent in the Google Forms to gain parents' consent for their children to participate in the study. The invitation to parents can be found in the supplemental materials of this article. Informed consent was completed in the form, after which parents passed the form to their children. Children and adolescents were informed that their data would be treated confidentially, and they were free not to answer questions. All questionnaires were anonymous. The time required for answering the questionnaires was about 30 min. After they completed the form, it was automatically submitted to the research team.

Ethical approval was gained separately from the ethical committee of Nusantara Scientific Psychology Consortium (Konsorsium Psikologi Ilmiah Nusantara; K-PIN) in 2020 and 2021 to conduct these two studies with children and adolescents during the COVID-19 pandemic in Indonesia.

Sample

The two studies used convenience and snowball sampling. Inclusion criteria were children and adolescents 10 to 18 years old and living in West Java Province. A cross-sectional

design was used, and each study consisted of different participants. We cannot determine whether children who participated in Study 2 were also participants in Study 1 since we did not include any item to check for that possibility when collecting the data. Table 1 displays the characteristics of participants of the two studies by gender and age group. Gender was registered according to self-reported information from each child, considering himself or herself as a boy or a girl.

In Study 1, 58.3% of participants were girls and 41.7% were boys; in Study 2, 44.9% were girls and 55.1% were boys. In both studies, almost half of the participants were high school students. Mean age for Study 1 was 14.61 ($SD=2.73$) and 14.87 ($SD=2.21$) for Study 2.

We assume that most participants probably live in families of medium to high socioeconomic background because they had Internet facilities. Internet access in Indonesia can be used as an indirect indicator of socioeconomic status. Hadiyat (2014) pointed out that people from lower socioeconomic status cannot afford Internet access and the devices, suggesting that only children and adolescents from middle economic status and higher were probably participating in online-based studies. In Indonesia, access was among the lowest compared to other participating countries in the Children's Worlds survey (Rees et al., 2020).

Instruments

Children's Worlds Subjective Well-Being Scale (CW-SWBS)

The Children's Worlds Subjective Well-Being Scale (CW-SWBS) is a multi-item cognitive context-free psychometric scale (Casas & González-Carrasco, 2021; Rees et al., 2020) translated and validated into Indonesian (Borualogo et al., 2019; Borualogo & Casas, 2019). The CW-SWBS5 includes five items with an 11-point scale from 0 (do not agree at all) to 10 (totally agree). The items are: (1) "I enjoy my life," (2) "My life is going well," (3) "I have a good life," (4) "The things happen in my life are excellent," and (5) "I am happy with my life." The CW-SWBS5 has been used in several studies of children and adolescents aged 10–18 years in Indonesia (for example, Borualogo & Casas,

Table 1 Participants of the Study 1 and Study 2 by gender and school grade

	Study 1						Study 2					
	Girls		Boys		Total		Girls		Boys		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Elementary students	151	14.9	128	12.7	279	27.6	22	1.3	196	12.0	218	13.3
Middle school students	160	15.8	117	11.6	277	27.4	286	17.4	387	23.6	673	41.0
High school students	278	27.5	177	17.5	455	45.0	429	26.2	320	19.5	749	45.7
Total	589	58.3	422	41.7	1,011	100	737	44.9	903	55.1	1,640	100

2021a; Bambang & Borualogo, 2021; Firdaus & Borualogo, 2021). For Indonesia, using representative samples, the original fit indices for 10-year-olds were $\chi^2 = 75.17$, $df = 5$, $p = .000$, comparative fit index (CFI) = 0.995, and root mean square error of approximation (RMSEA) = 0.043 (0.035 – 0.052) (Borualogo & Casas, 2019), and for 12-year-olds, $\chi^2 = 93.79$, $df = 5$, $p = .000$, CFI = 0.995 and RMSEA = 0.047 (0.039 – 0.056) (Borualogo & Casas, 2019). Cronbach's alpha for Study 1 was 0.930; for Study 2, it was 0.972. This study used the same scale for elementary, middle, and high school students.

Positive and negative affect scale

The Children's Worlds Positive and Negative Affect Scale (CW-PNAS) included three items on PA (feeling happy, calm, and full of energy) and four items on NA (feeling sad, stressed, bored, and lonely). The CW-PNAS was translated into the Indonesian language. The CW-PNAS evaluates children's feelings over the previous two weeks on a scale of 0–10 (Casas & González-Carrasco, 2021). Higher scores in PA indicate the better outcome, while higher scores in NA indicate the worse outcome. Cronbach's alpha for Study 1 was 0.708 for PA and 0.743 for NA. Cronbach's alpha for Study 2 was 0.851 for PA and 0.875 for NA.

Satisfaction items during the COVID-19 pandemic

Two items were used to measure satisfaction during the COVID-19 pandemic, one item with slightly different wording. In Study 1, children were asked how satisfied they were with the contact they had with friends during the COVID-19 pandemic. In Study 2, children were asked how satisfied they were with the communication they had with friends during the COVID-19 pandemic. In both studies, they were also asked how satisfied they were with how they spent their time during the pandemic. The options were 0 to 10, where 0 = Not at all satisfied and 10 = Totally satisfied. The Cronbach's alpha was 0.623 for Study 1 and 0.813 for Study 2, probably because the wording of the first item was different.

Family money

Children were not asked for information about the socioeconomic status (SES) of their family because the information provided by children on that matter is usually not sufficiently reliable. However, two different questions were asked about family money to get a better idea of children's worry about their family's money. In Study 1, the item was "During the last month, how worried are you about the money your family has?" This item was on an 11-point scale from 0 (not worried at all) to 10 (totally worried). In Study 2, the item

Table 2 Percentages worried about money of the participants from Study 1 and Study 2

Study 1			Study 2		
How worried are you about the money your family has?			How often do you worry about how much money your family has		
	n	%		n	%
0 = Not worried at all	22	2.2	Never	284	19.0
1	15	1.5	Sometimes	643	43.0
2	19	1.9	Often	384	25.7
3	29	2.9	Always	184	12.3
4	45	4.5	Total	1,495	100
5	143	14.1			
6	82	8.1			
7	123	12.2			
8	133	13.2			
9	124	12.3			
10 = Totally worried	276	27.3			
Total	1,011	100			

was "During COVID-19, how often do you worry about how much money your family has?" The answers were Never = 1, Sometimes = 2, Often = 3, and Always = 4. Results are presented in Table 2.

Data analysis

In each study, mean scores, cross-tabulation, and frequencies were calculated separately using SPSS version 25 to provide an overview of the children's perceptions and evaluations of their SWB, PA, NA, and satisfaction during the pandemic. Mean differences between gender and school grades were tested using ANOVA. Linear regression was used to analyze the contribution of satisfaction with contact or communication with friends and satisfaction with use of time on SWB, PA, and NA with gender and school grade as control variables. The scores for each item and psychometric scale presented in this study were transformed into 0–100 scales to make them visually comparable in the tables.

Results

Table 2 shows that in Study 1, 27.3% of the participants were totally worried about their family's money, and only 2.2% of them were not worried at all. Study 2 used a different but similar item asking about family money. Table 2 shows that 43.0% of participants reported that they sometimes worried about how much money their family has, and 12.3% of them were always worried.

Table 3 Mean scores for CW-SWBS, CW-PNAS items, satisfaction with contact or communication with friends, and satisfaction with using time by gender and school grade for each study (Scale 100)

	Girls		Boys		Elementary students		Middle school students		High school students		Total		
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	
					P						P		
Study 1													
CW-SWBS	71.66	21.84	74.62	19.16	0.026*	77.18	21.26	73.25	20.69	70.05	20.16	72.89	20.81
Happy	65.48	24.37	68.89	22.49	0.024*	70.89	25.34	66.68	23.06	64.59	22.66	66.90	23.66
Sad	57.57	28.12	47.04	27.97	0.000**	46.63	30.22	53.14	28.46	57.21	26.75	53.17	28.52
Calm	65.91	23.59	71.21	21.71	0.000**	66.16	24.90	71.23	22.09	67.43	22.09	68.12	22.97
Stressed	57.88	27.88	48.96	26.68	0.000**	52.19	30.79	50.69	28.29	57.47	24.94	54.15	27.72
Full of energy	64.62	24.59	66.92	24.12	0.139	70.00	25.26	65.49	24.41	62.92	23.53	65.58	24.41
Bored	77.67	26.29	70.31	28.68	0.000**	70.50	29.41	75.78	27.65	76.39	26.05	74.59	27.54
Lonely	61.63	32.32	55.21	31.59	0.002**	54.62	34.33	55.38	33.02	63.78	29.56	58.95	32.16
Satisfaction with contact with friends	53.30	25.54	52.70	25.46	0.679	48.40	27.89	55.10	25.09	54.60	23.85	53.00	25.50
Satisfaction with time use	59.60	25.48	62.30	27.20	0.102	62.10	27.92	63.00	25.46	58.50	25.50	60.80	26.23
Study 2													
CW-SWBS	70.07	25.36	71.85	24.42	0.150	73.28	19.79	72.79	25.99	68.83	24.97	71.05	24.85
Happy	66.77	24.81	69.38	24.77	0.036*	69.13	23.29	71.19	24.26	65.21	25.43	68.20	24.82
Sad	53.68	29.67	36.09	29.02	0.000**	37.57	27.15	33.34	30.52	55.43	27.45	43.99	30.59
Calm	65.94	24.94	65.27	26.80	0.603	58.26	23.65	68.91	25.75	64.70	26.35	65.57	25.98
Stressed	54.23	33.71	37.37	31.33	0.000**	35.37	27.86	32.89	33.22	58.57	29.94	44.95	33.48
Full of energy	63.88	25.79	65.33	26.84	0.268	64.59	24.15	67.64	26.89	62.04	26.13	64.68	26.31
Bored	64.94	32.45	55.53	33.78	0.000**	66.05	27.86	47.38	35.27	69.05	29.68	59.76	33.50
Lonely	52.54	36.32	40.68	33.47	0.000**	43.94	31.12	34.04	34.31	57.36	33.57	46.00	35.27
Satisfaction with communication with friends	70.84	25.45	72.14	25.12	0.302	71.28	23.36	72.30	25.16	70.96	25.92	71.55	25.27
Satisfaction with time use	64.49	25.04	67.04	24.75	0.039*	68.30	23.25	66.49	23.96	64.66	26.14	65.89	24.91

**Significant at $p < .01$; *Significant at $p < .05$

Analyses for the CW-PNAS were conducted at the item level because previous studies have shown that the regression loading of each item on the latent variable was very different, suggesting the items were not homogenous (Casas & González-Carrasco, 2021; see Table 3).

In Study 1, as seen in Table 3, significant differences were observed between genders for all variables, except for feeling full of energy, satisfaction with friends, and satisfaction with use of time. Boys ($M = 74.62$; $SD = 19.16$) displayed significantly higher mean scores than girls ($M = 71.66$; $SD = 21.84$) on the CW-SWBS and all the PA items (feeling happy and calm), while girls displayed higher mean scores than boys on all the NA items (Table 4).

Table 3 for Study 1 also displays significant differences between school grades for all variables of the CW-SWBS and the CW-PNAS. High school students reported higher scores on NA than elementary and middle school students. Elementary students displayed significantly higher mean scores than middle and high school students on CW-SWBS, the items feeling happy and full of energy. Middle school students displayed significantly higher mean scores on calmness than elementary and high school students.

For Study 2, Table 3 shows significant gender differences in feeling happy, sad, stressed, bored, lonely, and satisfaction with use of time. Boys were significantly happier and more satisfied with time use than girls, while girls were significantly sadder, more stressed, more bored, and lonelier than boys. Significant differences were also observed between school grades for all variables, except satisfaction with communication with friends and satisfaction with use of time. Elementary students reported significantly higher CW-SWBS mean scores than middle school and high school students. Additionally, elementary students ($M = 73.28$; $SD = 19.79$) showed a higher mean score for the CW-SWBS than middle school ($M = 72.79$; $SD = 25.99$) and high school students ($M = 68.83$; $SD = 24.97$). High school students reported significantly higher scores on NA than elementary and middle school students. These results indicated that during the second year of the COVID-19 pandemic in Indonesia, high school students were sadder, more stressed, more bored, and lonelier than elementary and middle school students. Middle school students displayed significantly higher mean scores on PA (feeling happy, calm, and full of energy) than elementary and high school students.

Separated regression models of satisfaction with the contact or communication with friends and satisfaction with use of time on CW-SWBS and CW-PNAS for Study 1 and Study 2 showed that all models were significant, as presented in Table 4. The models in Study 2 were able to explain higher percentages of the variability of the dependent variables than the models in Study 1.

In Study 2, the model for CW-SWBS was able to explain 53.80% of the variability of the dependent variable, the

highest percentage among other models in Study 2. In Study 1, the highest percentage was for “happy,” which explained 14.8% of the variability of the dependent variable.

School grade significantly contributed to participants' SWB, all NA items, happy and full of energy in both studies, and calm only in Study 2. The negative Beta scores in Table 4 indicated that being a younger child increases the probability of feeling happier, full of energy, and displaying higher SWB, while positive Beta scores indicated that being an older child increases the probability of all negative affect items in both studies and calm only in Study 2.

Gender showed a significant contribution on all NA items for both studies and calm only in Study 1. The negative Beta scores in linear regression as displayed in Table 4 indicated that being a girl increases the probability of feeling sad, stressed, bored, and lonely, while being a boy increases the probability of feeling calm.

Satisfaction with friends (contact with friends in Study 1 and satisfaction with communication with friends in Study 2) and satisfaction with use of time contributed positively to SWB and positive affect in both studies. In contrast, satisfaction with use of time contributed negatively to feeling sad, stressed, and lonely in Study 1, and satisfaction with communication with friends contributed negatively to feeling lonely only in Study 2.

Table 5 shows that in Study 1 and Study 2, WhatsApp was the most frequent mode of communication children used to keep in contact with their friends, followed by video calls (61.2%) in Study 1 and Instagram (55.2%) in Study 2. In Study 2, 54.0% of children reported meeting in person with friends. In Study 1, only 14.4% of children reported spending time in the neighborhood, but this was 37.2% in Study 2.

Discussion

Regarding the first aim of this study to examine children's SWB by gender and school grade, results showed that during the COVID-19 pandemic, boys displayed significantly higher CW-SWBS mean scores than girls in Study 1, while elementary students displayed significantly higher CW-SWBS mean scores than middle and high school students for both studies.

These results by gender are in contrast with findings from the third wave of the Children's Worlds survey using a representative sample in West Java that was collected before the COVID-19 pandemic in 2017. In that survey, girls ($M = 87.80$) displayed significantly higher SWB mean scores than boys ($M = 85.60$) (Rees et al., 2020). Findings from the third wave of the Children's Worlds survey also showed that both genders displayed higher CW-SWBS mean scores (Rees et al., 2020) than in Study 1 and Study 2 presented here with data obtained during the pandemic. Mean scores

Table 4 Regression of satisfaction with contact (Study 1) or communication (Study 2) with friends and satisfaction with time use on CW-SWBS and CW-PNAS with gender and school grades entered as control variables

	Study 1						Study 2								
	B	SE	β	t	p		Lower	Upper	B	SE	β	t	p	Lower	Upper
CW-SWBS															
Gender	2.186	1.261	0.052	1.734	0.083		-0.288	4.660	-0.566	0.879	-0.011	-0.644	0.519	-2.290	1.158
School Grade	-3.356	0.752	-0.135	-4.460	0.000		-4.832	-1.879	-1.849	0.628	-0.052	-2.944	0.003	-3.081	-0.617
Satisfaction with friends	0.857	0.274	0.105	3.124	0.002		0.319	1.395	3.482	0.227	0.354	15.341	0.000	3.037	3.927
Satisfaction with time use	1.792	0.266	0.226	6.732	0.000		1.270	2.314	4.404	0.231	0.441	19.088	0.000	3.951	4.856
	Adjusted $R^2 = 0.103$; $F = 30.129$; $df1 = 4$; $df2 = 1006$; $p < .01$						Adjusted $R^2 = 0.538$; $F = 477.746$; $df1 = 4$; $df2 = 1635$; $p < .01$								
Happy															
Gender	0.262	0.140	0.055	1.878	0.061		-0.012	0.537	-0.010	0.098	-0.002	-0.102	0.919	-0.203	0.183
School Grade	-0.307	0.083	-0.108	-3.684	0.000		-0.471	-0.144	-0.275	0.070	-0.077	-3.937	0.000	-0.412	-0.138
Satisfaction with friends	0.178	0.030	0.192	5.868	0.000		0.119	0.238	0.378	0.026	0.366	14.757	0.000	0.327	0.428
Satisfaction with time use	0.216	0.030	0.240	7.335	0.000		0.158	0.274	0.372	0.026	0.356	14.357	0.000	0.321	0.423
	Adjusted $R^2 = 0.148$; $F = 44.862$; $df1 = 4$; $df2 = 1006$; $p < .01$						Adjusted $R^2 = 0.436$; $F = 311.293$; $df1 = 4$; $df2 = 1599$; $p < .01$								
Sad															
Gender	-0.976	0.177	-0.169	-5.527	0.000		-1.323	-0.630	-1.367	0.149	-0.222	-9.187	0.000	-1.659	-1.075
School Grade	0.471	0.105	0.138	4.468	0.000		0.264	0.678	0.975	0.106	0.222	9.172	0.000	0.767	1.184
Satisfaction with friends	-0.026	0.038	-0.024	-0.685	0.493		-0.102	0.049	-0.037	0.038	-0.031	-0.963	0.336	-0.112	0.038
Satisfaction with time use	-0.118	0.037	-0.109	-3.165	0.002		-0.191	-0.045	0.069	0.039	0.056	1.760	0.079	-0.008	0.145
	Adjusted $R^2 = 0.064$; $F = 18.311$; $df1 = 4$; $df2 = 1006$; $p < .01$						Adjusted $R^2 = 0.126$; $F = 59.855$; $df1 = 4$; $df2 = 1635$; $p < .01$								
Calm															
Gender	0.507	0.141	0.109	3.591	0.000		0.230	0.784	-0.119	0.113	-0.023	-1.052	0.293	-0.341	0.103
School Grade	0.036	0.084	0.013	0.430	0.668		-0.129	0.201	0.167	0.081	0.045	2.067	0.039	0.009	0.326
Satisfaction with friends	0.141	0.031	0.157	4.601	0.000		0.081	0.201	0.285	0.029	0.277	9.727	0.000	0.227	0.342
Satisfaction with time use	0.133	0.030	0.152	4.470	0.000		0.075	0.192	0.332	0.030	0.318	11.148	0.000	0.273	0.390
	Adjusted $R^2 = 0.078$; $F = 22.501$; $df1 = 4$; $df2 = 1006$; $p < .01$						Adjusted $R^2 = 0.297$; $F = 174.068$; $df1 = 4$; $df2 = 1635$; $p < .01$								
Stressed															
Gender	-0.847	0.174	-0.151	-4.870	0.000		-1.188	-0.506	-1.155	0.162	-0.172	-7.108	0.000	-1.474	-0.836
School Grade	0.262	0.104	0.079	2.523	0.012		0.058	0.465	1.309	0.116	0.272	11.273	0.000	1.081	1.537
Satisfaction with friends	-0.052	0.038	-0.047	-1.363	0.173		-0.126	0.023	0.023	0.042	0.017	0.540	0.589	-0.060	0.105
Satisfaction with time use	-0.082	0.037	-0.078	-2.236	0.026		-0.154	-0.010	0.036	0.043	0.027	0.854	0.393	-0.047	0.120
	Adjusted $R^2 = 0.039$; $F = 11.290$; $df1 = 4$; $df2 = 1006$; $p < .01$						Adjusted $R^2 = 0.129$; $F = 61.892$; $df1 = 4$; $df2 = 1635$; $p < .01$								
Full of energy															
Gender	0.155	0.151	0.031	1.024	0.306		-0.142	0.452	-0.079	0.103	-0.015	-0.770	0.441	-0.280	0.122
School Grade	-0.327	0.090	-0.112	-3.620	0.000		-0.504	-0.150	-0.164	0.073	-0.043	-2.231	0.026	-0.308	-0.020
Satisfaction with friends	0.067	0.033	0.070	2.024	0.043		0.002	0.131	0.286	0.027	0.275	10.789	0.000	0.234	0.338
Satisfaction with time use	0.172	0.032	0.185	5.398	0.000		0.110	0.235	0.465	0.027	0.440	17.262	0.000	0.412	0.518

Table 4 (continued)

	Study 1					Study 2								
	B	SE	β	t	p	Lower	Upper	B	SE	β	t	p	Lower	Upper
Bored	Adjusted $R^2 = 0.062$; $F = 17.813$; $df1 = 4$; $df2 = 1006$; $p < .01$													
Gender	-0.696	0.174	-0.125	-4.001	0.000	-1.037	-0.354	-0.734	0.171	-0.109	-4.295	0.000	-1.069	-0.399
School Grade	0.253	0.104	0.077	2.437	0.015	0.049	0.456	0.563	0.122	0.117	4.613	0.000	0.324	0.803
Satisfaction with friends	-0.041	0.038	-0.038	-1.080	0.280	-0.115	0.033	0.078	0.044	0.059	1.773	0.076	-0.008	0.165
Satisfaction with time use	-0.068	0.037	-0.065	-1.852	0.064	-0.140	0.004	0.067	0.045	0.050	1.492	0.136	-0.021	0.155
	Adjusted $R^2 = 0.027$; $F = 8.073$; $df1 = 4$; $df2 = 1006$; $p < .01$													
Lonely	Adjusted $R^2 = 0.035$; $F = 10.052$; $df1 = 4$; $df2 = 1006$; $p < .01$													
Gender	-0.565	0.202	-0.087	-2.792	0.005	-0.962	-0.168	-0.783	0.1778	-0.110	-4.407	0.000	-1.131	-0.434
School Grade	0.450	0.121	0.117	3.731	0.000	0.213	0.687	0.961	0.127	0.190	7.572	0.000	0.712	1.211
Satisfaction with friends	-0.038	0.044	-0.030	-0.863	0.388	-0.124	0.048	-0.104	0.046	-0.074	-2.262	0.024	-0.194	-0.014
Satisfaction with time use	-0.127	0.043	-0.103	-2.971	0.003	-0.211	-0.043	0.036	0.047	0.025	0.765	0.444	-0.056	0.127
	Adjusted $R^2 = 0.062$; $F = 28.090$; $df1 = 4$; $df2 = 1635$; $p < .01$													

Table 5 Percentage of modes to keep in touch with friends during Corona Virus outbreak

	Study 1		Study 2	
	n	%	n	%
Voice call	455	45	872	53.2
Video call	619	61.2	804	49.0
WhatsApp	882	87.2	1,551	94.6
Instagram	558	55.2	942	57.4
Facebook	127	12.6	369	22.5
Line	309	30.6	390	23.8
Twitter	147	14.5	402	24.5
Hanging around the neighbourhood	146	14.4	610	37.2
Meeting in person with friends	-	-	885	54.0
Not at all	17	1.7	26	1.6
Zoom	19	1.9	451	27.5
Online games	11	1.1	535	32.6
Telegram	5	0.5	341	20.8
email	1	0.1	-	-
Google meet	4	0.4	389	23.7
Discord	6	0.6	158	9.6
Google classroom	1	0.1	-	-
Snapchat	1	0.1	49	3.0
Tik Tok	-	-	381	23.2
Webex	1	0.1	16	1.0

of boys and girls before the COVID-19 pandemic ($M = 87.80$ for girls and $M = 85.60$ for boys) (Rees et al., 2020) were higher than the mean expected set-points of SWB ($M = 75$), according to the expected set-points indicated by Cummins (2014), while the CW-SWBS mean scores of boys and girls during COVID-19 pandemic (see Table 3) were lower than these set-points. The current study also showed that girls displayed a higher probability of feeling negative affect than boys (Table 4).

These results are in line with findings from a study in Luxembourg, Germany, and Brazil that showed girls are more vulnerable to the negative impact of COVID-19 that affects mental health (de Abreu et al., 2021). Moreover, results also showed that the CW-SWBS mean score of both genders in Study 2 (Table 3) was lower than the CW-SWBS mean score of both genders in Study 1 (Table 3). These results suggest that the pandemic seriously affected the level of SWB of children, and in the second year of the pandemic, children were less happy than in the first year.

Study 1 and Study 2 show that elementary students displayed significantly higher CW-SWBS mean scores than middle and high school students, while high school students displayed the lowest CW-SWBS mean scores in both Study 1 and Study 2. These results suggest that the older the children, the lower their CW-SWBS mean scores during the COVID-19 pandemic. Results also revealed that the older the

children, the higher their probability of feeling sad, stressed, bored, and lonely in both studies. These results align with a study conducted by Casas and González-Carrasco (2019), which indicated that SWB scores decreased with age. The older the children, the more their SWB is affected by their satisfaction with school marks than by friendships and their freedom to choose activities (Kim et al., 2019). In alignment with Kim et al.'s (2019) findings, a study in Indonesia during the first year of COVID-19 showed that older children reported the lowest satisfaction with what they learned at home during school closure (Borualogo & Casas, 2021a).

Moreover, the CW-SWBS scores in Study 2 (in the second year of the COVID-19 pandemic) were lower than the CW-SWBS scores in Study 1. This result suggests that these CW-SWBS scores were lower than the mean set-point of SWB according to Cummins' criteria (2014).

Children and adolescents participating in Study 1 displayed lower mean negative affect scores than those in Study 2. These results suggest that children and adolescents surveyed in the second year of COVID-19 had adapted to the unpleasant situation, and buffers were activated to protect them from greater negative affect, as defended by the homeostasis theory (Cummins, 2014). Two buffers were activated in the process of adapting to the unpleasant situations during COVID-19: (1) having relationships with friends and (2) engaging in purposeful activities (Cummins, 2014). Their satisfaction with contact or communication with friends and satisfaction with time used to choose purposeful activities protected their SWB (Table 4). These results were in contrast with findings from a study with adults in Israel that showed increasing negative feelings of participants from three phases of data collection: before COVID-19, during the lockdown, and after the lockdown (Shavit et al., 2021). Results of the current study indicated that children and adolescents are able to activate buffers to protect themselves from increasing negative affect during the COVID-19 pandemic.

In the present study, a higher percentage of participants in Study 2 (37.2%) were able to hang around the neighborhood and meet with friends in person (54%) than participants in Study 1 (14.4%) (Table 5). These results align with a study in China that showed psychosocial support buffered the negative effect of loneliness during the COVID-19 quarantine (Wang et al., 2021) and a study in Canada, which showed that having access to friends correlated with SWB (Mitra et al., 2021).

Satisfaction with use of time contributed negatively to negative affects only in Study 1 (Table 4). Participants may not have had various activities during the lockdown, which caused them to be more bored and less satisfied with use of time. The use of time is one important factor influencing children's SWB (Savahl et al., 2020). It indicates children's freedom to choose their daily activities, contributing

to their SWB (Lee & Yoo, 2017). Studies during COVID-19 in Canada and the United States revealed that participating in physical and outdoor activities improved well-being in children and adolescents (Mitra et al., 2021; Jackson et al., 2021).

Study 1 and Study 2 showed that boys displayed significantly higher mean scores on feeling happy than girls, while girls displayed significantly higher mean scores on NA than boys in both studies. This suggests that girls were sadder, more stressed, more bored, and lonelier than boys during the pandemic in both studies, while boys were happier and calmer in Study 1 and happier in Study 2 than girls. These results are in contrast with results of the Children's Worlds survey on the overall child population in West Java Province before the COVID-19 pandemic, which showed that girls reported a higher percentage (46%) of happiness than boys (39%), and boys reported a higher percentage (14%) of sadness than girls (11%) (Rees et al., 2020).

Study 1 indicated that elementary students felt significantly happier and had more energy than middle and high school students (Table 3). In contrast, high school students were significantly sadder, more stressed, more bored, and lonelier than elementary and middle school students, and middle school students were significantly calmer than elementary and high school students.

Study 2 showed that middle school students felt significantly happier, calmer, and had more energy than elementary and high school students (Table 3). In contrast, high school students felt sadder, more stressed, more bored, and lonelier than elementary and middle school children.

Regarding satisfaction with life during the COVID-19 pandemic, both Study 1 and Study 2 show significant school grade differences in satisfaction with their contact with friends. Elementary students reported significantly lower satisfaction in this category than middle school and high school students. These results are in line with findings in Canada (Mitra et al., 2021), which showed that having access to friends correlated with a lower likelihood of reporting low SWB. According to Cummins (2014), having good relationships buffered the level of SWB. Regarding the COVID-19 pandemic, children were restricted from meeting with their friends in person; however, they could still use Internet-based modes of communication to stay in contact (see Table 5). Moreover, in Study 2, 54.1% of children reported that they could meet in person with their friends. A study conducted by UNICEF (2021) in Indonesia reported that children needed to meet COVID-19 health protocol requirements (e.g., wearing a mask, having temperature taken, washing hands) when attending school and meeting with their friends at school.

Conclusions

Both Study 1 and Study 2 show that the COVID-19 pandemic had consequences on the SWB of Indonesian children. Girls displayed significantly lower SWB and higher mean scores for NA than boys, which suggests that girls were less happy than boys during the COVID-19 pandemic in Indonesia. Results also displayed significant school grade differences, whereby the older the children, the lower their SWB. Older children also reported higher NA scores than younger children.

Results in the second year showed lower CW-SWBS scores both by gender and school grade compared to results in the first year, suggesting that Indonesian children were less happy in the second year of the COVID-19 pandemic. Parents should allow children to stay in contact with their friends through online-based communication since the children's satisfaction was higher in the second year when there was contact with friends using online-based communication. Parents should also allow children to do more physical activities during the COVID-19 pandemic to increase their SWB and help them stay on course at home.

This study has some limitations. First, this is not a representative sample of Indonesian children; therefore, the results cannot be generalized. Since the sampling technique was convenience and snowball, we cannot determine how independent the samples are and whether participants in Study 2 might have participated in Study 1. Second, this study only displays descriptive statistics from two data collection periods during the COVID-19 pandemic and did not examine all factors that contribute to the children's SWB level. Third, this is not a longitudinal study, and data collected in Study 1 and Study 2 may not be strictly comparable. Fourth, as already pointed out, some items are worded differently in Study 1 and Study 2, as is the case of satisfaction with contact and with communication with friends, and how worried participants were about the family money and how often they worry about family money.

Although results from Study 1 and Study 2 show that younger children reported higher SWB scores than older children, this study does not evaluate the SWB of children under 10 years old during the COVID-19 pandemic in Indonesia. Future studies should investigate younger children's perceptions and evaluations of their SWB during the COVID-19 pandemic.

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Authors' contributions All authors contributed equally to writing the article. All authors read and approved the final version of the manuscript.

Declarations

Ethical approval Ethical approval was gained separately from the ethical committee of Nusantara Scientific Psychology Consortium (Konsorsium Psikologi Ilmiah Nusantara; K-PIN) in 2020 and 2021 to conduct these two studies with children and adolescents during the COVID-19 pandemic in Indonesia.

Conflict of interest The authors declare that they have no conflict of interest.

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