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The effects of an intervention to improve mental health during the COVID-19 quarantine: comparison with a COVID control group, and a pre-COVID intervention group

Susana Gorbeña^a , Ignacio Gómez^b, Leila Govillard^c, Sare Sarrionandia^a, Patricia Macía^a, Patricia Penas^a and Ioseba Iraurgi^a 

^aDepartamento de Personalidad, Evaluación y Tratamientos Psicológicos, Facultad de Psicología y Educación, Universidad de Deusto, Bilbao, Spain; ^bDepartamento de Psicología Social y del Desarrollo, Facultad de Psicología y Educación, Universidad de Deusto, Bilbao, Spain; ^cDepartamento de Trabajo Social y Sociología, Facultad de Ciencias Sociales y Humanas, Universidad de Deusto, San Sebastián, Spain

ABSTRACT

Objective: The COVID-19 pandemic has constituted an unprecedented challenge to society and science and it has provided an unexpected opportunity to explore the effects of a positive intervention in times of adversity and confinement. The goal was to evaluate the effects of a theory driven group intervention to cultivate mental health and flourishing. **Design:** A pre post design with three groups (151 individuals) was conducted, including an experimental group that received the intervention during the pandemic, a pre-COVID intervention group, and a COVID control group. **Main Outcome Measures:** Based on Keyes' concept of positive mental health, measures of subjective, psychological and social well-being were obtained, as well as an indicator of psychological distress (GHQ12). **Results:** Intervention groups showed an increase in well-being and the COVID control group a decrease. Change scores revealed significant differences. Overall percentage of individuals at risk of ill health in baseline was 25.2%, but after the intervention, the COVID control group reached 64.1%. **Conclusions:** Despite the limitations, the present findings suggest that interventions to sustain and improve mental health in times of crisis and adversity can be an effective approach.



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The COVID-19 pandemic constitutes an unprecedented challenge to society and science. For psychology and other health professionals, researchers, and academicians, it is a trial to test our ability to fulfil our core mission: “to improve the condition of both the individual and society” (European Federation of Psychologist Associations (EFPA), 2005), and/or to “benefit society and improve people’s lives” (American Psychological Association (APA), 2012). In the so-called “normal times”, psychology’s quest for

CONTACT Susana Gorbeña  susana.gorbenadeusto.es  Departamento de Personalidad, Evaluación y Tratamientos Psicológicos Facultad de Psicología y Educación, Universidad de Deusto, Apartado 1, Bilbao, 48080, Spain

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knowledge contends with many limitations. Due to ethical principles, experimental research in psychology is frequently limited in terms of the manipulation of variables. However, sometimes, historical events offer us the opportunity to analyze the impact of environmental circumstances otherwise out of control. This paper takes advantage of such a situation: unexpectedly, the COVID-19 pandemic has made it possible to compare the effects of an intervention during the pandemic, with a non-treatment control group, and a pre-COVID intervention group. Even though this paper is a small contribution to scientific knowledge, it alludes to humankind's capacity to thrive and flourish, even in times of adversity (Linley & Joseph, 2004). It also points out to the paramount contribution psychology can make to health and well-being.

Research on positive interventions has rapidly increased worldwide in the past two decades. Researchers and practitioners have proposed and assessed a variety of interventions designed to increase positive affect, well-being, optimism, personal strengths, and hope, and/or to reduce clinical symptoms of distress. Several meta-analyses and systematic reviews provide evidence about the effectiveness of these interventions (Bolier et al., 2013; Chakhssi et al., 2018; Hendriks et al., 2019; Koydemir et al., 2020; Sin & Lyubomirsky, 2009; Weiss et al., 2016). In general, significant though moderate effects are found in different populations, age groups and health conditions.

Other researchers have expressed concern about the lack of a comprehensive and unifying theoretical framework to guide these interventions, especially those that are multi-component (Parks & Biswas-Diener, 2013; Wong & Roy, 2018). The exceptions to this state of affairs are Fava's Well-Being Therapy (Fava, 1999), based on the construct of psychological well-being (Ryff & Keyes, 1995), and Seligman's Positive Psychotherapy, founded in his positive psychology principles (Seligman et al., 2006). However, these manualized interventions were designed to be utilised with clinical populations, even though they have also been applied to non-clinical groups.

Given the scarcity of multicomponent positive interventions targeting the general population, we designed and tested a theoretically driven manualized classroom intervention focussed on cultivating well-being and personal development. Keyes' theory (2002; 2003) of mental health seemed especially suitable to inform this intervention. Keyes described positive mental health as something different from the mere absence of mental illness, and operationalised it as a syndrome of symptoms of positive feelings and positive functioning. Subjective or emotional well-being (positive emotions and life satisfaction), psychological well-being (self-acceptance, positive relations with others, personal growth, purpose in life, environmental mastery, and autonomy) and social well-being (social coherence, actualization, integration, acceptance, and contribution) are the three components of positive mental health. Keyes (2003) defined mental health as a flourishing state, characterised by high levels of well-being, "a state in which and individual feels positive emotions towards life and is functioning well psychologically and socially" (p. 294), and its opposite as languishing, a state of emptiness and stagnation.

As Keyes (2013) mentioned, studies with adults, college students and adolescents have supported the model. Positive mental health has been associated with better psychosocial functioning (Keyes, 2002), all-cause mortality (Keyes & Simoes, 2012), the prevalence and incidence of mental illness (Keyes et al., 2010) lower levels of

adolescents' conduct problems (Keyes, 2006), and with higher levels of college students' engagement with personal growth and development (Robitschek & Keyes, 2009).

The intervention designed is described in detail in the procedure section. Briefly, it consists of eight group sessions that promote work in the three areas of well-being (subjective, psychological, and social) using diverse resources and activities, and homework assignments.

In sum, the initial goal of this project was to test the effectiveness of the intervention. However, due to the breakout of the COVID-19 pandemic the goal broaden to include: (1) the exploration the psychological effects of the pandemic in a sample of young adults, and (2) the analysis of differences, comparing data from a previous intervention conducted last year (a non-pandemic situation) with the same type of population.

With these goals in mind, the following hypotheses were formulated: (1) significantly increased levels of mental health will be observed in the COVID intervention group compared with the COVID control group after the intervention; (2) significantly decreased levels of mental illness will be observed in the COVID intervention group compared with the COVID control group after the intervention; (3) lower levels of mental health improvement will result in the COVID intervention group compared with the pre-COVID intervention sample; (4) the COVID control group will have a significant deterioration in mental health and, (5) the COVID control group will have a significant increase in emotional distress after the intervention.

Methods

Participants

Participants were recruited at a medium-size private university in northern Spain. It is a convenience sample of 151 individuals. Ages ranged from 20 to 44 years old ($M = 21.55$, $SD = 2.54$), 86.8% were females, 9.9% had some chronic health condition and 2% reported a disability. Participants belonged to three different groups. Sixty-nine students, who registered for two elective courses in Psychology that covered well-being topics, formed the experimental or intervention COVID group. The researchers offered the possibility to obtain course credit for participation in the study, described as a well-being and personal development workshop. If individuals declined participation, they completed the course via an independent study option. Only one student used this option due to her work schedule. The second group, named the COVID control group, included 56 participants who signed up for other elective courses; of those, 17 cases were lost in the post-test. In order to analyze the possible effects of the pandemic, a pre-COVID group was included. This group participated in the same program during the previous year and were recruited using the same methods as the COVID intervention group. In this case, also one student declined participation. This group totalled 43 individuals.

Analysis of differences between the three groups at baseline showed no statistical significant differences in gender ($\chi^2_{(2)} = 0.20$; $p = .906$), chronic health condition ($\chi^2_{(2)} = 2.09$; $p = .351$) and disability ($\chi^2_{(2)} = 1.18$; $p = .555$). There was a statistical significant difference in mean age ($F = 5.04$, $p = .008$), explained by the fact that the pre-COVID

intervention group was formed only by senior students, and the COVID intervention and control groups included junior students. The difference, even though significant, is only of one year.

Instruments

Following Keyes' conceptualisation, the instruments described below were used to obtain a measure of positive mental health. They were administered at base line and post-test with a time lapse of 10 weeks.

Satisfaction with life scale-SWLS (Diener et al., 1985) adapted by Vázquez et al. (2013). It consists of five items with a seven-point response format, from "*strongly agree*" to "*strongly disagree*". It is a sound and widely used measure and internal consistency in the Spanish adaptation was .88, and in our study, Cronbach's alpha was .81.

Scale of Positive and Negative Experience (SPANE) developed by Diener et al. (2010). It is a measure of the amount of time positive and negative emotions are experienced in the past four weeks. It includes 12 items with a response format ranging from one (*very rarely or never*) to five (*very often or always*). It yields three scores: positive, negative, and balance affect, but only the positive affect score was used in this study. Cronbach Alpha for the positive affect scale was .87, and in our study .88.

Psychological Well-being. The Spanish adaptation (Díaz et al., 2006) of Ryff's Psychological Well-being scales (Ryff, 1989) was used. The Spanish version consisted of 39 items with a 6-point Likert scale response format. The scales measure self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. It has been widely used in the literature and is considered a sound measure of positive functioning in the eudaimonic tradition of well-being research (Keyes, 2013; McDowell, 2010). As an indicator of psychological well-being, the score resulting from the average sum of the items was used. The alpha Cronbach coefficient was .86.

Social well-being was measured using the Spanish adaptation of Keyes' instrument (Keyes, 1998) published in 2005 by Blanco and Díaz. It measures five dimensions of social well-being: integration, acceptance, contribution, coherence, and actualization and it consists of 33 items, with a 5-point response format from "*strongly agree*" to "*strongly disagree*". The Spanish adaptation eliminated eight items but given the small non-representative sample used in this adaptation, the 33 items of Keyes' original scale were included in this study. The average internal consistency of the scales in the Spanish adaptation was .74 (Blanco & Díaz, 2005), and in our study it was .88 for the total score.

Mental distress. The General Health Questionnaire-GHQ was used to evaluate mental distress (Goldberg & Hillier, 1979; Lobo et al., 1986) in its Spanish 12-items version (Sánchez-López & Dresch, 2008). The 12-items version (GHQ-12) is a widely used screening instrument for common mental disorders. It is a self-administered measure developed for the detection of psychiatric disorders. Participants have to report how often they have experienced a series of symptoms in the last few weeks. The 12 items present a Likert type response format with a range of responses from 0 (*better than usual*) to 3 (*much worse than usual*). The average sum of its items

provides a scalar indicator of the degree of mental distress. Likewise, the transformation of the Likert responses (0-1-2-3) into GHQ scores (0-0-1-1), allows for an indicator of the number of symptoms present with greater intensity than usual, for which cut-off points can be established to differentiate the possible mental health risk. The instrument showed an adequate internal consistency with a Cronbach's alpha of .76 for the 12-items Spanish version (Rocha et al., 2011). In our study, the internal consistency was .83.

Procedure

The following procedures describe the development of the intervention program and the implementation of the study. With regards to the program, a manualized intervention named *Well-being and Personal Development Program* was developed after Keyes' concept of positive mental health and a thorough literature review of available interventions. It consists of eight, two-hour sessions addressing different themes. Each topic and activity was hypothesised to cultivate at least one of the dimensions of positive mental health (Keyes, 2002). A brief outline of sessions, indicating the dimensions considered, topics, activities, and homework assignments is presented in [Table 1](#). The intervention includes activities that have empirical evidence of their effectiveness such as *The three good things* and *The gratitude letter and visit* (Seligman et al., 2005), *Taking meaningful pictures*, developed by Steger et al. (2013), *The best possible self* exercise (King, 2001), and Thoen and Robitschek (2013) program to promote personal growth.

The sessions used a combination of group or dyadic dialog, brief presentations, audiovisual material, exercises and tests, and testimonies. Brief examples follow. For instance, group dialog involved sharing homework activities and discussing personal views of the material, which was used to elicit gratitude to society. Dyadic encounters occurred more in the first half of the program to facilitate sharing personal information such as one's view of personal strengths and the role of positive emotions in one's life. Brief presentations by the facilitators occurred in all sessions, for instance to explain the functionality of positive emotions and to suggest strategies to cultivate them. An example of an exercise is the guided imagery of the best possible future professional self. Tests and questionnaires helped in exploring personal characteristics such as strengths, views about well-being and personal development, and knowledge about the history of humankind (*The Factfulness Test*). Finally, testimonies involved sharing different views about happiness, life meaning and purpose, using videos of famous and laypersons as well as written materials.

One third of the sessions were devoted to reviewing and sharing the homework assignment of the previous week. It was hypothesised that it would facilitate vicarious learning and would maintain participants' engagement in the program. Participants received a folder to keep the materials and a *Well-being Notebook* to be used throughout the experience.

Regarding implementation, the project secured the approval of the Board of Research Ethics of the university. All participants signed an informed consent and were given a numerical code for identification to dissociate personal data. The sessions were conducted by six facilitators (two males and four females) supervised by a

Table 1. Well-being and personal development program.

Session title	Main focus	Topics and activities	Homework assignment
Presentation Base line		Informed consent and generation of identification code Completion of questionnaires	
Well-being and personal development	Subjective, psychological and social well-being	Expectation, norms and commitments Personal beliefs about happiness, well-being and personal development. Well-being incremental mind-set	Finding a source of well-being
Positive emotions	Subjective well-being	Positive and negative emotions. Functionality of positive emotions Strategies to cultivate positive emotions	Three good things
Personal and social gratitude	Subjective and social well-being	Meaning of gratitude Gratitude to society Planning the gratitude letter and visit	Thanks Europe! Gratitude letter and visit
Personal strengths	Psychological and social well-being	Personal strengths: insights and VIA test	Checking my strengths with significant others
Meaning and purpose in life	Psychological and social well-being	Diversity of meanings and purposes Reflection on meaning	Taking meaningful pictures
Best possible self and world	Psychological and social well-being	Imagery of best professional self Objective world view: Factfulness Test	Integrating best possible self and best possible world
Personal growth	Psychological well-being	Personal growth initiative The comfort zone	Out of my comfort zone
Summary	Subjective, psychological and social well-being	Compilation of learning and experiences Visual creative summary Recommendations for continued work	Final essay
Assessment		Completion of questionnaires Satisfaction Evaluation	

certified clinical psychologist. They were experienced doctoral level psychologists and doctoral students with graduate training in clinical psychology. Following Worth (2017), facilitators attended a training program that included reading materials, personal reflection on the topics, group discussion, and the realisation of all homework activities. The training lasted an average of 40 hours. Facilitators also attended a group supervision meeting after they completed each session, and were asked to keep and share a log of the intervention. They also signed a confidentiality contract.

The program run during the assigned class hours. Each class had an average size of 37 individuals. The class group met together at the beginning of the sessions, and was divided in four small stable groups of nine to 12 members, each with one facilitator. Some brief presentations and instructions about the homework were offered to the entire class group. The program run from early February until the end of May 2020, and during the same period in 2019. The quarantine in the country started March 15th and ended June 21st.

When the program approached Session 5 on purpose and meaning in life, the government ruled a quarantine due to the outbreak of the COVID-19 pandemic. The University cancelled all in-person activities, and teaching and learning continued using a remote format. With the consent of participants, the program continued in this format. An extra session addressed this transition and issues related to the outbreak. Participants had the opportunity to express and share their fears about the future, to become fully aware of the situation, receive

support from others, exchange ideas and resources to deal with the lockdown, and be fed with assurance from the facilitators regarding the continuation of their academic life. Recommendations of the Mental Health Department of the World Health Organization (WHO) (2020), and the Association for Psychological Science (APS) (2020) regarding pandemic management and how to remain resilient were shared. From then onwards, ten minutes were devoted at the beginning of each session to share feelings and thoughts about the situation, and to check how participants were dealing with a strict lockdown. Google Meet served for group meetings, and materials were provided in a learning platform. Finally, the post-test was conducted using Google Forms. The last step included a debriefing session where program characteristics and group results were presented, and participants were given the opportunity to receive feedback in an individual meeting.

Data analysis

To describe data, means (M) and standard deviations (SD) were used for scale variables, and percentages (%) for nominal variables. To analyze results with the selected design (pre- post-test contrast for three groups) an analysis of variance was conducted, calculating within subjects, between subjects and interaction effects using F test and p . The spherical assumption of the variance-covariance matrix was checked with the Mauchly's W test and the homoscedasticity with the Levene's test. To estimate effect sizes, squared eta (η^2) coefficients and its equivalent Cohen's d coefficient were calculated. In order to estimate change, difference scores (M_{dif}) were computed (post-test values minus pre-test values), with positive values indicating an increase in the variable and negative ones a decrease. To analyze differences in these scores, an analysis of variance was done (F -test) using Scheffe test and the Hedges g coefficient to estimate the effect size.

Finally, differences in the risk of ill mental health in the three groups, both at baseline and after the intervention, were calculated using Chi square test, and McNemar test to estimate risk change in each group.

Results

Preliminary analyses showed that the assumptions of the sphericity of the variance-covariance matrix, and the homoscedasticity of variances were adequate. [Figure 1](#) presents the evolution of scores of the three groups in the three well-being dimensions, and the global index of positive mental health. Statistically significant interaction effects are found for all scores, with notable effect sizes (Cohen's d values between .72 and .96), indicating a differential response of the groups. An increase in well-being measures is observed in the two interventions groups (COVID and pre-COVID), and a decrease in scores in the control COVID group. In order to assess change, mean differences were compared. As it can be seen in [Table 2](#), the test has been significant and the post-hoc tests reveal that differences are present when comparing the experimental COVID group with the Control COVID group (with Hedges' g effect sizes between .80 and 1.05), and between the experimental pre-COVID and the control COVID groups (g values ranging from .73 to 1.21). On the other hand,

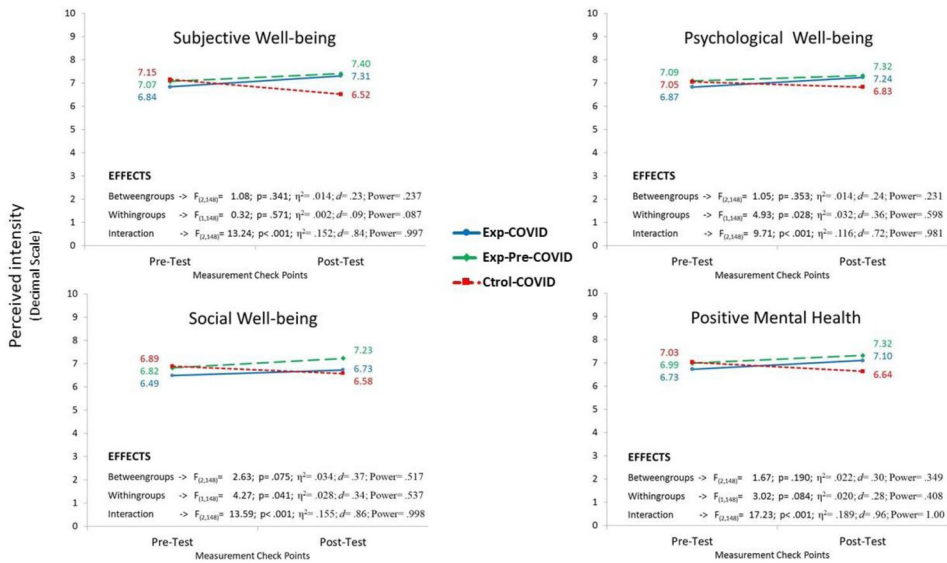


Figure 1. Evolution of outcomes in well-being indicators and positive mental health.

differences between the COVID and pre-COVID intervention groups are non-significant, with low effect sizes ($g < .25$), but difference scores in the COVID group are slightly and consistently higher.

With regards to mental distress assessed with the GHQ12, **Figure 2** and **Table 2** report the findings. The upper graph in **Figure 2** shows changes in scores for the three groups. As with positive mental health, the average score of participants in the COVID intervention group shows a significant decrease in symptomatology and an increase for the other two groups, though small (0.15) and non-significant for the pre-COVID intervention group. All effects have resulted statistically significant (between groups $F = 9.38$, $p = .042$, $\eta^2 = .042$; within groups $F = 4.37$, $p = .030$, $\eta^2 = .031$ and interaction effect $F = 10.15$, $p < .001$, $\eta^2 = .121$). Change (**Table 2**) also shows significant differences, being more notorious for the comparison between the COVID experimental group and the COVID control group ($g = .86$) than for the comparison between the COVID and pre-COVID interventions groups ($g = .64$).

As stated, the GHQ, using cut-off points, can also identify groups at risk. The second graph in **Figure 2** shows the results when comparing the groups in terms of the changes (before and after the intervention), in the level of risk of ill mental health or psychological distress. Using a cut-off point of 4 or more symptoms, the prevalence of risk of ill mental health in the baseline for the three groups was 25.2%, with no significant differences between groups ($\chi^2 = 1.62$, $p = .445$). Four months later, differences in prevalence of risk were significant ($\chi^2 = 17.43$, $p < .001$), being 64.1% for the COVID control group, 27.9% for the pre-COVID intervention group and 26.1% for the COVID experimental group. The graph presents, for each group, the percentage of participants that resulted from the combinations of having or not having a risk of ill mental health before and after the intervention. As it can be seen, there is significant percentage (48.7%) of individuals in the COVID control

Table 2. Between-group contrast of change scores (M_{Diff}) on well-being indicators, mental health and mental distress.

	Exp-COVID Group (1) n = 69		Ctrl-COVID Group (2) n = 39		Exp-Pre-COVID Group (3) n = 43		Statistics Test		Post-Hoc test, Effect size (g)		
	M_{Diff}	SD_{Diff}	M_{Diff}	SD_{Diff}	M_{Diff}	SD_{Diff}	F	p	1 vs 2	1 vs 3	2 vs 3
Subjective Well-Being	0.45	1.27	-0.63	0.93	0.33	0.91	13.24	<.001	0.92*	0.10	1.03*
Psychological Well-Being	0.38	0.77	-0.22	0.61	0.23	0.60	9.71	<.001	0.83*	0.21	0.73*
Social Well-Being	0.24	0.69	-0.31	0.67	0.41	0.61	13.59	<.001	0.80*	0.25	1.11*
Positive Mental Health	0.36	0.76	-0.39	0.61	0.32	0.55	17.23	<.001	1.05*	0.05	1.21*
Mental Distress- GHQ	-0.37	1.83	1.14	1.55	0.15	1.52	10.15	<.001	0.86*	0.30	0.64*

Note.- * statistically significant for $p < .01$.

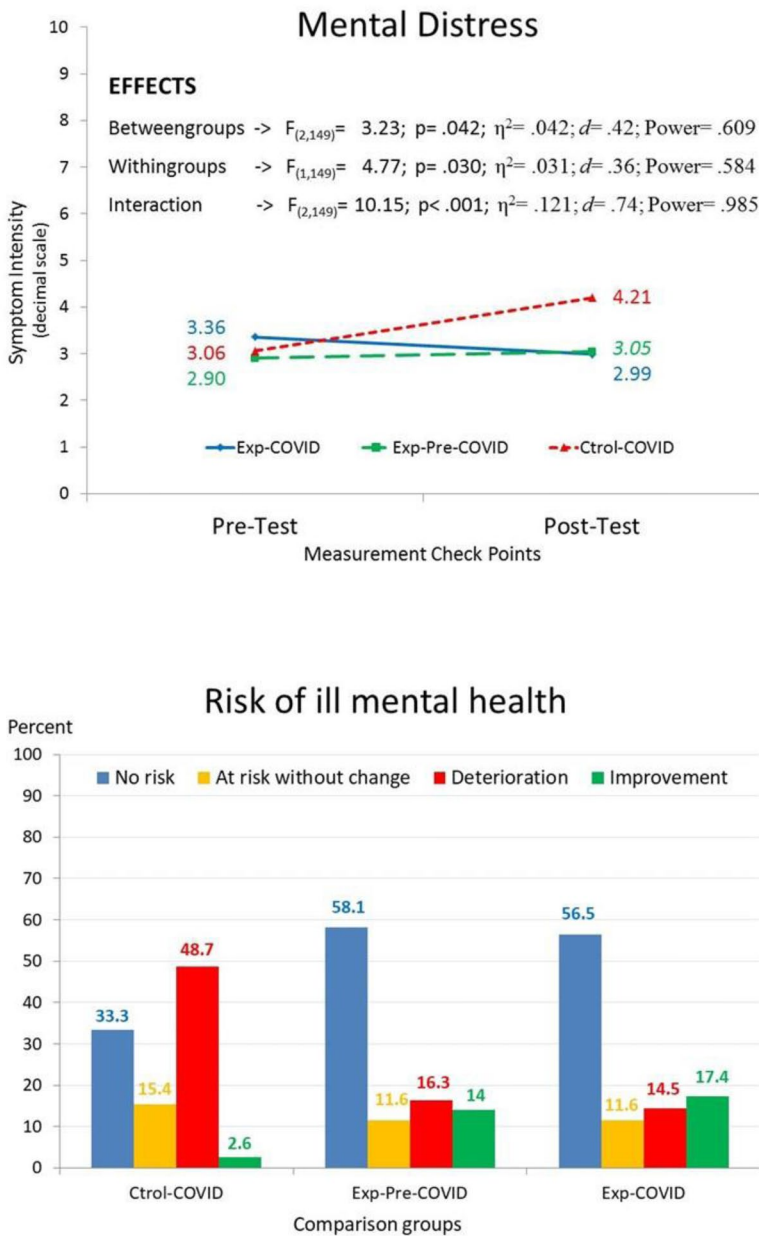


Figure 2. Evolution of outcomes in mental distress and risk of ill mental health.

group who experience deterioration (not at risk at base line but at risk at post-test) compared to 16.3% in the pre-COVID intervention group and to 14.5% in the COVID experimental group. Along the same lines, an improvement can be seen (at risk at pre-test and not at risk at post-test) in the COVID experimental group (17.4%) compared with the pre-COVID intervention group (14%) and the COVID control (only 2.6%).

Discussion

Testing the effectiveness of a manualized theory driven psychological intervention to help individuals improve their mental health and grow psychosocially was the initial objective of this project, and continued to be so despite the irruption of the pandemic. This goal was broadened to include the exploration of the effects of the international health emergency in a group of European college students and thus, data from a similar group in a pre-COVID situation were incorporated in the analysis. A brief comment follows regarding its effectiveness and the limitations of the study. Subsequently, the discussion will focus on the results associated with the pandemic.

The first two hypotheses were confirmed: the COVID intervention group showed increased levels of mental health and decreased levels of mental illness than the COVID control group. These results are in line with previous research on positive interventions (see Koydemir et al., 2020 for the latest meta-analysis). The effect sizes for subjective and psychological well-being and for mental distress were much higher than those reported by Hendriks et al.' meta-analysis (Hendriks et al., 2020) of 51 studies of multicomponent interventions. Therefore, it is believed that this program can be a contribution to current research on positive interventions in as much as it proposes a new theory driven multicomponent intervention that addresses the three components of positive mental health or flourishing. To the best of the authors' knowledge, interventions addressing the social dimension of well-being are almost non-existent. The focus in previous works has been subjective and psychological well-being (Koydemir et al., 2022; Weiss et al., 2016). This was an attempt to propose a comprehensive intervention including the social aspects. However, given that these are preliminary findings, much work is still needed to fully test the intervention, and thus these results should be taken with caution. Future research should include larger and varied samples, at least 6-month follow up measures, and a randomised allocation of subjects to each condition, as well as other quantitative and qualitative data sources. For instance, in depth interviews or open-ended essays about the experience could shed light into the processes involved in change and growth. The role of variables that might influence the effectiveness of the intervention such as person-activity fit, duration, delivery format (Sin & Lyubomirsky, 2009), growth mindset (Howell et al., 2016) and other psychosocial variables like personality, hope, resilience and optimism, should also be explored.

Furthermore, in terms of limitations, although the different groups have shown equivalence in some of the sociodemographic variables as well as in the main variables in baseline, we cannot omit a possible limitation because of non-randomization of participants to each of the groups and the possible effects of participants' expectations regarding the benefits of the program. Besides, one should consider the possible existence of variables associated with the time of evaluation in addition to the pandemic; making comparisons across different time points can add uncontrolled error. Nevertheless, the equivalence found between the groups at pre-test, and the differences found support the findings of the present study.

The outbreak of the pandemic has brought to light the plausible effects of positive interventions in times of adversity. The third hypothesis regarding the expected lower levels of mental health improvement in the COVID intervention group compared with

the pre-COVID intervention sample was not confirmed. Participants experienced growth and a decrease in levels of distress. Furthermore, improvements in mental health reached those attained by the group in a non-adversarial situation, and were even slightly higher. Research on positive change after trauma or adversity (Linley & Joseph, 2004) has documented higher levels of functioning after such experiences, though the evidence is limited (Jayawickreme et al., 2021). Without planning, participants were offered psychological resources to cope when most needed, and apparently, they took advantage of them. Adding to the intervention, some environmental influences could also account for these results. The social situation facilitated exercising some of the topics addressed in the intervention. For instance, expressions of gratitude to essential workers, applauding every evening at the windows, became a personal commitment, and a new form of a community gathering. Also, the lockdown facilitated savouring simple valued activities, caring for others, finding meaning, reconnecting with old friends, or experiencing elevation and awe in the face of solidarity and altruism of many individuals. Given the naturalistic nature of this study, it is impossible to disentangle the contribution of the intervention and the situation. However, the COVID control group experienced the same context with no observable positive effects in the scores.

As pointed out by Linley and Joseph (2004), by facilitating growth, distress may be alleviated. The proportion of subjects that experienced reduced risk of ill mental health was significant in the intervention group, compared with the increase in such a risk for the COVID control group. Furthermore, risk reduction in this group was higher than in the group in the pre-COVID situation. Taking into account reports of negative psychological effects in quarantine situations (Brooks et al., 2020), these results point out to the effects of positive interventions in times of adversity. It seems these type of interventions can have a preventive, protective and even promotive effect. Therefore, programs are needed, not only to deal with the negative consequences of this type of situation, but also to protect and promote mental health and well-being. Organisations and mental health providers could deliver programs to address mental distress of their communities (Kelly, 2020), but if those programs have a focus on mental health and personal development, as Vinkers et al. (2020) suggested, they may have a more profound effect in the well-being of individuals. Interventions can be conducted even in a quarantine situation, another relevant lesson from this experience.

As it pertains to the psychological effects of the pandemic, these results, even though based on a small sample, are in line with current findings worldwide. The COVID control group significantly decreased mental health and showed an alarming increase in psychological distress (more than 60% were at risk and of those, 48.7% had increased it). Thus, the two hypotheses regarding the deterioration of mental health and the increase in emotional distress in the COVID control group were confirmed. Along the same lines, higher levels of emotional distress during this pandemic have been reported for adolescents and youth (Liang et al., 2020; Zhou et al., 2020), young adults (Liang et al., 2020), college students (Baloran, 2020), and the general population (Sibley et al., 2020; Wang et al., 2020). Taking into account previous international data on the mental health status of college students (Auerbach et al., 2018), and calls for urgent action (El Ansari, 2014), higher education institutions should

address an issue that will surely affect academic life in the near future, not only students but also staff. In fact, it should be mentioned that the facilitators of the intervention also reported benefitting from it, a non-scientifically documented collateral benefit of the program that might deserve future research to assess the effects of psychological interventions upon practitioners.

In sum, it is believed that this study contributes to the current literature on the pandemic illustrating the preventive, protective and promotive effects of a positive intervention in times of adversity, as well as a risk mitigation effect. In the past two decades, researchers, academicians and policy makers have been rethinking health, incorporating the psychosocial, cultural and spiritual dimensions. The management of this worldwide crisis, as WHO has pointed out (World Health Organization (WHO), 2021), requires an overarching approach that incorporates mental health prevention and promotion. Well-being and even flourishing of the general population, especially children, youth, elders, and disadvantaged groups should be addressed if psychology, as a discipline and a profession, wants to fulfil its mission and contribute to the welfare of humankind in these truly challenging times.

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Disclosure of interest

The authors report no conflict of interest.

ORCID

Susana Gorbeña  <http://orcid.org/0000-0002-5289-9850>

Ioseba Iraurgi  <http://orcid.org/0000-0002-0143-9539>

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