

‘Isolated together’: online group treatments during the COVID-19 pandemic. A systematic review

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ABSTRACT

Considering the emerging need to face the negative impact of the pandemic on mental health, social support, and access to health services, it became a critical issue to adapt to online group settings and create new group interventions to face the developing distress during this time. The aim of the current study is to investigate the main findings on OPGI conducted during the COVID-19 pandemic from March 2020 until March 2022, with a particular focus on: i) the therapeutic group factors; ii) what kind of OPGI works and for whom; iii) settings and emerging dimensions. In accordance with PRISMA guidelines, we performed a systematic review on scientific databases (PsychINFO, PubMed, Web of Science and EBSCO) searching for studies published between March 2020 and March 2022. ‘Group intervention’ or ‘group therapy’ or ‘group treatment’ crossed with ‘COVID-19’ and synonymous, were used as keywords. Internet based intervention was used as an eligibility criteria during the full-text screening. A total of 1326 articles were identified, of which 24 met the inclusion criteria. Among all studies, with different participants and different orientations, data extracted supported psychological online group interventions as an effective approach to reducing psychological distress and increasing psychological resources in the interpersonal field. Our findings also showed that COVID-19 has led to new needs and issues, that require the investigation of new dimensions for online psychological interventions. Methodological and clinical implications will be discussed through a descriptive table related to setting characteristics. Recommendations are made for future research.

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Key words: Systematic review; COVID-19; online group intervention; internet-based psychological intervention; group treatments.

Introduction

The medical and social COVID-19 emergency (Wang *et al.*, 2021) imposed a necessary change to the psychological interventions for psychologists and mental health services. Primarily, it led ongoing therapy or counselling to adapt to online settings and the necessity to improve the provision of support and care for people who experienced psychological distress. The American Psychological Association (APA) encouraged the use of tele-psychotherapy and tele-counselling during the COVID-19 emergency, considering the support for people in that period of collective trauma a priority even if the systems and the psychologists themselves were not ready to move online. Indeed, after the COVID-19 pandemic

outbreak a large number of clinicians decided to provide exclusively remote treatments. Before the COVID-19 pandemic, online platforms were used especially for interventions included in the Cognitive-Behavioural Therapy (CBT) framework, showing a reticence for other types of models, such as psychoanalytic therapy (Amichai-Hamburger, 2014; Scharff, 2018). Providing online psychological interventions before COVID-19 pandemic was a choice, while after the spread of the virus it became a need to guarantee the continuity of mental health care (Mancinelli *et al.*, 2021). This growing popularity could be ascribable to the affordability and accessibility of the online medium, in particular for people with physical limitations and/or residing in rural areas, though it entails some limits. For example, online psychotherapy needs a socio-economic status that would permit a stable connection, at least one digital device, and sufficient digital literacy. Moreover, literature suggests the ethical risks of online platforms, such as privacy and possible hacking by third-party sources.

A recent meta-analysis showed videoconference interventions had the same efficacy as in-person interventions (Batastini *et al.*, 2021). However, less is known about online psychological group interventions (OPGI), which, in their in-person setting were considered one of the most common and efficacious treatments for people in traumatic situations (Rosendhal *et al.*, 2021). Initial studies about the implementation of online group counselling and psychotherapy before the COVID-19 pandemic showed online group psychological treatments via video-call had similar results to in-person interventions (Zerwas *et al.*, 2017), except for a slow decrease in therapeutic alliance (Gentry *et al.*, 2019; Weinberg, 2020). In addition, OPGI seemed to be helpful in patients with difficulties in creating a deep relationship with clinicians and members of the group, patients with an avoiding attachment, with symptoms of dissociation, and with a borderline personality disorder, while it was not recommended for people with great difficulty in emotional regulation and psychotic patients (Weinberg, 2020). During the COVID-19 pandemic, as it was with individual psychotherapy, group psychotherapy was forced to move online (Weinberg, 2020). In fact, during the lockdown, along with the prohibition of gatherings, the only way to ‘aggregate in groups’ was online. It must be said that new communication technologies extended the boundaries of space and time, making it achievable to manage larger group sizes and to involve individuals with varied clinical pictures, easing the development of both monosymptomatic online groups, intended as a group composed by members with similar diagnostic backgrounds, and heterogeneous online group which permitted the interaction between individuals with different emotional issues. Taking into account that the COVID-19 outbreak entailed a sudden readjustment, it could be important to differ the initiatives designed online, like a *digital native* kind of intervention, from the in-

terventions methodologically implemented in-person that were obliged to *migrate* online to assure care continuity, however, no evidence is available about this reconfiguration process, neither the eventual increase of participants per group, since this research field is still new-born (Weinberg, 2020). According to de Maré (1990), small groups - composed of less than 20 participants - display more difficulties in emotional expression, while medium and large groups, respectively composed by 20-60 participants and more than 60 participants, run into regressive mechanism that can undermine thinking processes.

The pandemic impacted the relationship domain, increasing isolation, loneliness and reducing in-person contacts to limit contagion. These circumstances could call to mind the evocative title of Turkle (2017) ‘work *‘Alone Together: Why We Expect More from Technology and Less from Each Other’*, which inspired the title of this systematic review.

In this sense, group counselling and psychotherapy represent an instrument of choice to enhance well-being through an enlarged relational system, providing a space for sharing and processing emotional experiences linked to the COVID-19 pandemic (Brusadelli *et al.*, 2021).

Hence, the aim of this study is to create a synthesis of the main findings concerning OPGI implemented during the COVID-19 pandemic. In particular, the interest is to investigate the eventual effectiveness and outcomes of OPGI considering: i) the therapeutic group factors; ii) what kind of OPGI works and for whom; iii) setting and structural components of OPGI and new assessment emerging dimensions.

Materials and methods

Search strategy and studies selection

With the aim to explore, identify, and discuss existing studies on psychological group intervention realised online during the COVID-19 pandemic, a systematic review was performed between February and March 2022. In accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) Statement (Moher *et al.*, 2009), we searched through different electronic databases (PsychINFO, PubMed, Web of Science, and EBSCO). The following string of key-terms was used for the searching process: Group intervention OR group counseling OR group therapy OR peer-support OR support group OR group psychotherapy OR group treatment OR self-help group AND COVID-19 OR coronavirus OR 2019-Ncov OR Sars-Cov-2 OR Cov-19.

The following inclusion criteria were used: i) quantitative, longitudinal, qualitative and mixed-methods design of the studies; ii) studies which reported the evaluation of web-based psychological group interventions, conducted by psychologists and/or facilitators, born subsequent to the outbreak of Sars-Cov-2; iii) published in peer-re-

viewed journals; iv) written in English; v) published between February 2020 and March 2022.

i) Reviews, meta-analyses, commentaries, conference proceedings, letters, dissertations, books or book chapters, and abstracts; ii) studies which did not report an evaluation of the intervention conducted by psychologists and/or facilitators; iii) studies not published in peer-reviewed journals; iv) studies not written in English were excluded.

Nevertheless, considering the aim of the current review, we decided not to define restrictive inclusion criteria on the methodology used by the studies, such as the type of study design.

Initially, a total of 3641 were identified as shown in the PRISMA flow diagram (Figure 1). Among those, 2315 duplicates were removed, after which the reviewers assessed titles and abstracts using the eligibility criteria. The search returned 250 articles reviewed in full-text, and among those full-text articles assessed for eligibility, 24 were evaluated as suitable for the current systematic review. The remaining 226 articles were excluded for the following reasons: use of other languages, being abstracts, systematic reviews, or editorial, and not reporting OPGI during the COVID-19 pandemic.

Quality assessment

For the quality assessment, the JBI Checklist for randomized controlled trials and the JBI Checklist for quasi-experimental studies (non-randomized experimental studies) were used (<https://jbi.global/critical-appraisal-tools>).

Each item was rated according to 3 possible responses 'yes', 'no', 'unclear'. Two members of the research group

independently scored each included study, and, in the end, an overall quality judgment was elaborated. The scoring, based on the proportion of 'yes' responses on the total, was organized on 3 levels: level A rating if 95% of applicable categories were rated as 'yes', level B, if between 94% and 50% of items were rated as 'yes' and level C if less than 50% of items were rated as 'yes'.

Results

The 24 papers included in the systematic review are listed in Table 1. The information on the papers extracted includes: i) the country and pandemic restrictions in which the study was conducted; ii) the characteristics of the participants (sample size, gender, age); iii) the research design; iv) the main purpose of the study; v) the dimensions analysed; vi) the main results; vii) the level of quality assigned and the corresponding percentage of 'yes' responses. In addition, specific information was extracted from the work regarding the characteristics of the group intervention carried out for the purposes of the study, as summarised in Table 2. Amongst these: v) target; vi) type of group (therapeutic, peer-support, psycho-educational); vii) objective of the group intervention; viii) setting (number of participants, conduction, 'digital immigrant' or 'digital native', theoretical framework); ix) evaluation. With respect to the type of intervention, the following emerged: therapeutic supportive groups (12), therapeutic expressive groups (2), psychoeducation (4), peer-support groups (4) and group counselling (2). Considering the quality of the studies, 3 studies resulted in level A, 1 in level C and the majority (20) of the studies were level B. In particular, all the RCT studies resulted in level B. Among all the studies, 6 were RCTs; in particular, 2 used a waiting list control trial design, 2 used no-treatment control group, 1 compared OPGI with an in-person group and 1 used usual care controls. Considering the design of the other studies, 9 did not provide any type of comparisons, 3 provided a comparison with no treatment groups, 1 compared OPGI with an onsite intervention, 1 compared OPGI with an in-person intervention, 1 compared OPGI with waiting list group, 2 compared OPGI during COVID-19 with pre-COVID intervention groups, and 1 compared Mindfulness-Based Cognitive and Solution-Focused Approach groups and no treatment control group.

The supportive group interventions were aimed at different targets, including clinical and non-clinical populations, health care workers (HCWs) and different age groups (adults, adolescents, elders); the expressive group interventions were aimed at patients with psychiatric illnesses; the counselling interventions were aimed at students; and the peer-support and psycho-educational interventions were aimed at different populations, including caregivers and patients with organic illnesses. Among all the group interventions, 13 of them started and took place during the lockdowns in different countries.

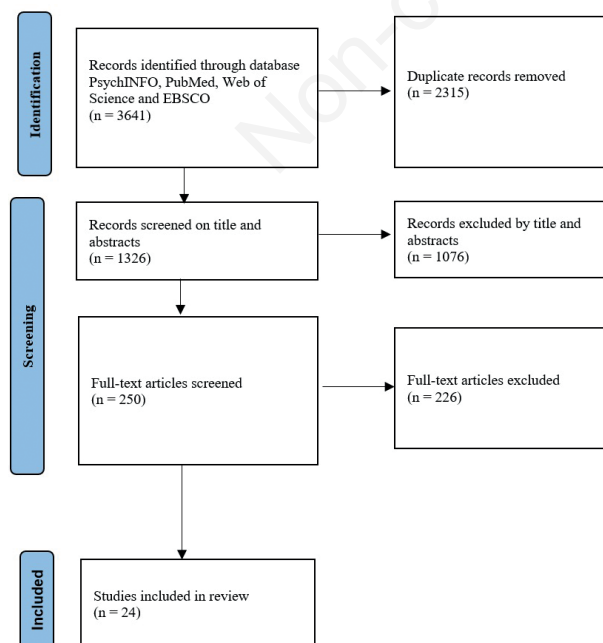


Figure 1. PRISMA flow chart diagram.

Table 1. Full text sources retained.

Number	Authors, date	Country, pandemic restrictions	Targets	Participants (N, gender, Mean Age and/or range)	Age of participants (mean and/or range)	Study design	Objective	Measures	Results	Level of quality (%/yes)
1	Biancalani G. <i>et al.</i> , 2021	Italy Lockdown	Psychiatric patients	15 5 M; 10 F	$M_{age} = 40.73$ $SD = 11.07$	Interview (no comparison)	Investigate helpful aspects of shifting to group tele-psychotherapy	CCI	Increased well-being; tele-psychotherapy helped to mitigate the sense of social isolation	C (33.33%)
2	Brouzos A. <i>et al.</i> , 2021 (a)	Greece, Lockdown	Adults	87 18 M; 64 F	$M_{age} = 33.07$, $SD = 9.55$ Range 20 – 65	Pre-post test. No treatment non-randomized control group	Investigate the effectiveness of a group online positive psychology intervention	IRI; CD-RISK-10; PANAS; DJGLS; GAD-7	Increased empathy, resilience, and experience of positive emotions; reduction of depression, anxiety, loneliness and fear of COVID-19 in comparison to control group	B (77.77%)
3	Brouzos A. <i>et al.</i> , 2021 (b)	Greece, Lockdown	Police officers	94 62 M; 32 F	Intervention Group $M_{age} = 36.73$ $SD = 5.11$ Control Group $M_{age} = 35.98$ $SD = 4.83$	Pre-post test. No treatment non-randomized control group	Investigate the effectiveness of a group online positive psychology intervention	FCQ; IRI; CD-RISC-10; PANAS; DJGLS; DASS-21; GAD-7; PHQ-9	Increased empathy, resilience; statistically significant interactions between Time and Group in all dependent variables, with the exception of anxiety; reduction of fear of COVID-19 in comparison to control group	A (100%)

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4	Brouzos A. <i>et al.</i> , 2021 (c)	Greece, Lockdown	Adults	44	6 M; 38 F	Mage = 31.93 SD = 8.09 Range 20 – 54	Longitudinal (no comparison)	Investigate the effectiveness of a group online positive psychology intervention, specific therapeutic factors and satisfaction with the online format	FCQ; IRI; CD- RISC-10; PANAS; DJGLS; DASS-21; GAD-7; PHQ- 9; TUQ; CIQ	B (55.55%)	Catharsis negatively correlated with imagination abilities. Self- disclosure positively correlated with reduction of loneliness, anxiety, and depression. Guidance positively correlated with understanding of the others' perspectives, and negatively with positive emotions. Self- understanding negatively associated with the increases in empathic interest in others, resilience, and the decrease in social loneliness. Vicarious learning was negatively associated with the decrease in emotional loneliness. Therapeutic alliance positively associated with the decrease of fear of COVID- 19. Satisfaction with the online format positively correlated with universality
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5	Celia G. <i>et al.</i> , 2021	Italy, Lockdown	Students	75	5 M; 70 F	$M_{age} = 21.18$ Range 19 – 26	Pre-post test design. No treatment randomized control group	Investigate the efficacy of online group intervention	STAI-Y; PANAS	Increased positive affects and reduction in negative affects in the intervention group. No statistically significant differences were found for anxiety	B (69.23%)
6	Drysdale M.T.B. <i>et al.</i> , 2021	Canada, NS	Students	52	19 M; 33 F	Range 17 – 23	Randomized controlled trial (online VS in-person comparison)	Investigate the feasibility of an online peer support group and well-being	WBMMS	Both the online and face-to-face peer support groups scored significantly higher on post-test measures of well-being; good feasibility of peer support offered online.	B (69.23%)
7	Gorbeña S. <i>et al.</i> , 2021	Spain, Lockdown	Students	151	20 M; 131 F	$M_{age} = 21.55$ $SD = 2.54$ Range 20 – 44	Pre-post test with COVID control group, and a pre-COVID intervention group	Investigate the efficacy of online group intervention	SWLS; SPANE; PWB; SWBS; MHC-SF; GHQ-12	Increased well-being in comparison with control group; overall percentage of individuals at risk of ill health in baseline was 25.2%, but after the intervention, the control group reached 64.1%.	B (77.77%)
8	Hechanova M.R. <i>et al.</i> , 2021	Philippine, Lockdown	Adults	53	14 M; 39 F	$M_{age} = 25$ $SD = 5.6$	Pre-post test design (no comparison)	Investigate the efficacy of a resilience support group during quarantine	BCS; FFMQ; DASS-21; WHO-5; BRS	Increased adaptive coping strategies, nonreactivity, well-being and resilience; reduction of depression.	B (77.77%)
9	Karagiozi K. <i>et al.</i> , 2021	Greece, NS	Caregivers of patients with dementia	71	NS	Onsite $M_{age} = 45.79$ $SD = 9.09$; Online $M_{age} = 42.59$ $SD = 12.55$	Pre-post test (onsite VS online no-randomized comparison)	Investigate the efficacy of online and in-person psychoeducative interventions	BAI; BDI; ZBI	Both online and in-person group interventions reduced anxiety, depression, sense of burden	B (69.23%)

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10	Lazararoni E. <i>et al.</i> , 2021	Italy, Lockdown	Adolescents and young adults with emotional disorders	50	8 M; 42 F	Range 13 – 24	Pre-post test design (no comparison)	Investigate peri- and post-traumatic symptomatology linked to COVID-19 during the first lockdown in Italy measured before and after an online EMDR group intervention	IES-R; STAI-Y; Emotion Thermometer; PTGI	Increased post-traumatic growth; reduction of anxiety, post-traumatic symptoms related to intrusiveness, hyperarousal	B (77.77%)
11	Lecomte T. <i>et al.</i> , 2021	Canada, Lockdown	Patients of psychosis service	17	11 M; 3 F	$M_{age} = 22.5$ $SD = 5.5$ Range 18 – 30	Pre-post test design (no comparison)	Investigate online group therapy's acceptability, feasibility, and potential effects	BPRS-E; SPS; SERS-SF; WAI	Increased self-esteem; reduction of psychiatric symptoms	B (77.77%)
12	Lewis M. <i>et al.</i> , 2022	UK, Lockdown	Professional caregivers of traumatised children	51	5 M; 46 F	NS	Pre-post test design (no comparison)	Evaluate the effect of Nurturing Attachment Programmes	BPS; CQ; PRFQ	Increased parental self-efficacy, caring and reflective functioning after the group programme	B (77.77%)
13	Mirhosseini S. <i>et al.</i> , 2021	Iran, NS	Caregivers of patients with COVID-19	70	31 M; 39 F	Range 39 – 40	Randomized controlled trial (no treatment comparison)	Investigate the efficacy of a psychoeducational support group	COVID-19 ENACL; ZBI	Reduction of burden in comparison with control group	B (92.00%)
14	Naini R. <i>et al.</i> , 2021	Indonesia, NS	High school Students	24	NS	Range 14 – 17	Pre-post test design. Mindfulness-Based Cognitive and Solution-Focused Approach groups and no treatment control group comparison	Investigate of efficacy of online counselling group	HS; CAMM	Mindfulness-based cognitive and solution-focused approach increased humility	A (100%)
15	Paul J.J. <i>et al.</i> , 2021	USA, NS	Mother-infant pairs	86	F	Pre-pandemic group $M_{age} = 33$ Pandemic group $M_{age} = 30$	Pre-post test design (comparison with a pre-pandemic group)	Compare 2019 in-person and 2020 telehealth services	EPDS; PDSS; CES-D; BAI; SCL-90; IES-R; PSI-SF; DAS-7	EPDS score was 0 in both conditions; remission depressive symptoms	B (89.00%)

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16	Scholl, J. <i>et al.</i> , 2021	Germany, Lockdown	Psychiatric patients	33	18 M; 20 F	$M_{age} = 39.44$ $SD = 12.28$	Pre-post test design (no comparison)	Investigate acceptability, usability, and feasibility of a group chat program	ZUF-8; PHQ-9; WHOQOL-BREF; CEQ	Post-treatment evaluation moderately high overall satisfaction; no statistically significant difference in depressive symptoms and quality of life	B (89.00%)
17	Shapira S. <i>et al.</i> , 2021	Israel, Lockdown	Older adults	82	16 M; 66 F	$M_{age} = 72$ $SD = 5.6$ Range 65 – 90	Randomized controlled trial (waiting list controls)	Investigate the efficacy of online group intervention	PHQ-9; FSSQ SSML; FSSQ	Reduction of depression, and loneliness; no significant difference in social support	B (62.00%)
18	Smith-MacDonald <i>et al.</i> , 2022	Canada, NS	HCW	8	8 F	$M_{age} = 37$	Interview (no comparison)	Investigate feasibility and acceptability of online group therapy	CSQ-8; NEII; PCL-5; DASS-21; MIOS; MSPSS; ProQol; DERS-18; B- COPE; AAQ; PTGT; CDRS-10	Intervention is highly applicable to COVID-19 experience. Online format allowed flexibility and increased sense of comfort and control. Psychological health, social function, occupational impairment, emotional regulation, coping, cognitive flexibility, post-traumatic growth, resilience did not report significant changes. Stress decreased significantly.	B (67.00%)

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19	Steiger H. <i>et al.</i> , 2022	Canada, NS	Adults with Eating disorders	125	8 M; 111 F; 2 NB; 2 Prefer not to say	Control group $M_{age} = 30.22$ Intervention group $M_{age} = 28.41$	Pre-post test design (in-person VS online comparison)	Investigate efficacy of online group intervention compared to the in-person program	GAD-7; PHQ-9	The results of the online intervention were found to be in line with those obtained from the same offline intervention. Online intervention improved eating symptoms, weight levels, and service satisfaction	B (78.00%)
20	Thombs B. D. <i>et al.</i> , 2021	Canada, NS	Patient affected by scleroderma	172	10 M; 162 F	$M_{age} = 55.0$	randomized controlled trial (usual care controls)	Investigate efficacy of online group intervention	PROMIS Anxiety 4a version 1.0; PHQ-9; COVID-19 FQCMC; ULS-6; MSBS-8; IPAQ-E; CSQ-8	No significantly improvement on mental health outcomes post-intervention; reduction of anxiety and depression significantly 6 weeks follow-up	B (77.00%)
21	Weis R. <i>et al.</i> , 2020	USA, NS	Students	32	7 M; 25 F	Range 19 – 21	Pre-post test waiting-list control group	Investigate efficacy of Koru Mindfulness	CAMS-R; SCS; MOSSS; PSS; BAI; CCPT 3rd Edition	Increased mindfulness and self-compassion; reduction of stress, anxiety and sleep problems compared to control group.	B (89.00%)
22	Xu W. <i>et al.</i> , 2021	China, NS	Adolescents	30	NS	Range 12 – 19	Pre-post test design (no comparison)	Investigate the efficacy of online group intervention with aerobic exercise	GHQ-12; WEMWS; AAQ-II	Increased well-being, flexibility; reduction of distress, experiential avoidance compared to control group	A (100%)

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23	Zhang H. <i>et al.</i> , 2021	China, Lockdown	57	27 M; 24 F	M _{age} = 50.12.	randomized controlled trial (waiting list controls)	Evaluate the effectiveness of a mindfulness-based intervention for psychological distress among Chinese residents during COVID-19	Increased mindfulness-awareness; reduction of distress, somatic symptoms, depression and anxiety	B (69.23%)
24	Ziadni M.S. <i>et al.</i> , 2021	USA, NS	101	31 M; 70 F	M _{age} = 49.76 SD = 13.90	randomized controlled trial (waiting list controls)	Investigate the efficacy of online group intervention	Reduction of chronic pain, pain intensity, sleep disturbance, and pain bothersomeness compared to control_group	B (92.00%)

AAQ = Acceptance and Action Questionnaire; AAQ – II = Acceptance and Action Questionnaire – 2nd Edition; BAI = Beck Anxiety Inventory; B-COPE = Coping Orientation to Problems Experienced Inventory; BCS = Brief COPE scale; BDI-II = Beck Depression Inventory – II Long Form; BPRS-E = Brief Psychiatric Rating Scale-Expanded version; BPSS = Brief Parental Self-efficacy Scale; BRS = Brief Resilience Scale; BSI-18 = Brief Symptom Inventory – 18; CAMM = Child and Adolescence Mindfulness Measurement; CAMS-R = Cognitive and Affective Mindfulness Scale-Revised; CCI = The Client Change Interview; CCPT-3 = Conners Continuous Performance Test 3rd Edition; CD-RISK-10 // CDRS-10 = Connor-Davidson Resilience Scale; CEQ = Credibility Expectancy Questionnaire; CES-D = Center for Epidemiologic Studies-Depression Scale; CIQ = Critical Incident Questionnaire; COVID-19ENACL = COVID-19 Educational Needs Assessment Checklist; COVID-19 FQCMC = COVID-19 Fears Questionnaire for Chronic Medical Conditions; CQ = Carer Questionnaire; CSQ-8 = Client Satisfaction Questionnaire; DAS-7 = Dyadic Adjustment Scale; DASS-21 = Depression, Anxiety and Stress Scale-21; DJGLS = De Jong Gierveld Loneliness Scale; DERS-18 = Difficulties in Emotion Regulation Scale; FSSQ = Duke-UNC Functional Social Support Questionnaire; Emotion Thermometer; EPDS = Edinburgh Postnatal Depression Scale; FCQ = Fear of the Coronavirus Questionnaire; TUQ = Telehealth Usability Questionnaire; FFMQ = Five Factor Mindfulness Questionnaire; GAD-7 = Generalized Anxiety Disorder 7-item Scale; GHQ-12 = General Health Questionnaire; HS = Humility scale; IES-R = Impact of Event Scale – Revised; IPAQ-E = International Physical Activity Questionnaire-elderly; IRI = Interpersonal Reactivity Index; MHC-SF = Mental health Continuum Short Form; MAAS = Mindful Attention Awareness Scale; MOSS = Medical Outcomes Study Sleep Scale; MSBS-8 = 8-item version of Multidimensional State Boredom Scale; MSPSS = Multidimensional Scale of Perceived Social Support; NEII = Narrative Evaluation of Intervention Interview; PANAS = Positive and Negative Affect Schedule; PCL-5 = PTSD Checklist; PCS = Pain Catastrophizing Scale; PDSS = Post-partum Depression Symptom Scale; PFRQ = Parental Reflective Functioning Questionnaire; PHQ-8 = Patients Health Questionnaire-8; PHQ-9 = Patients Health Questionnaire-9; PROMIS = Patient-Reported Outcomes Measurement Information System; ProQoL = Professional Quality of Life Scale; PSI-SF = Parenting Stress Index – Short Form; PSS = Perceived Stress Scale; PTGI = Post-Traumatic Growth Inventory; PWB = Ryff's Psychological Well-being scales; SCL-90 = Symptom Checklist-90-Revised; SCS = Self-Compassion Scale; SERS-SF = Self-Esteem Rating Scale Short Form; SPS = Social Provision Scale SSML = Short Scale of Measuring Loneliness; SPANE = Scale of Positive and Negative Experience; STAI-Y = State-Trait Anxiety Inventory; SWBS = Social Well-being Scale; SWLS = Satisfaction With Life Scale; ULS-6 = 6-item version of UCLA Loneliness Scale; WAI = Work Alliance Inventory; WBMMS = Well-being Manifestation Measure Scale; WEMWBS = Warwick-Edinburgh Mental Well-being Scale; WHO-5 = Well-being Index; WHOQOL-BREF = Abbreviated Worlds Health Organization Quality of Life assessment; ZBI = Zarit burden Interview; ZUF-8 = Client Satisfaction Questionnaire-8.

Almost all the interventions for clinical population and general adult population were implemented specifically during lockdowns. Among the group interventions included in the review, 11 will be defined as 'digital immigrants' insofar as they are in-person interventions that were transposed and adapted online, while 13 will be defined as 'digital natives' insofar as they were designed from scratch. It should be noted that OPGI with clinical populations all fall into the 'digital immigrants' category (5/5). This distinction has been introduced to highlight the different processes and dynamics that lead to the online configuration of the intervention. In fact, the immigration of some interventions online involved an adaptation and an afterthought of the peculiar dynamics that the models consider, while the online native interventions were designed exclusively for virtual settings.

Considering the group sizes, most groups were small (17), few were medium (5), and some not specified (2). Among the most frequently used platforms were Zoom (8), Skype (2), WeChat (2), while others were less frequent (1 Microsoft Teams, 1 WhatsApp, 1 Koru, 1 Keep, 1 GoToMeeting, 1 Facebook Messenger, 1 Google Meet). 11 articles reported data on participant drop-out.

A) Therapeutic factors

Only 2 studies assessed dimensions related to therapeutic factors (Brouzos *et al.*, 2021c; Lecomte *et al.*, 2020). The only study which assessed multiple group therapeutic factors was that of Brouzos *et al.* (2021c), which proposed a brief intervention with adults based on the integration of CBT, mindfulness, and positive psychology. They recorded higher rates in guidance, and acceptance, and lower scores on altruism and therapeutic alliance. Guidance appeared to be positively correlated with the ability to understand the other, and negatively correlated with increases in positive emotions, while therapeutic alliance seemed to increase as the fear of COVID-19 decreased. Lecomte *et al.* (2021) only examined therapeutic alliance in a group of patients with psychotic symptoms and found similar values to those in a pilot study of an in-person therapy group, although no statistical analysis was performed in this regard.

B) Therapeutic groups on clinical populations

In 5 studies the results of therapeutic groups targeted clinical populations during the COVID-19 pandemic. Among those, 4 studies (Lecomte *et al.*, 2021; Lazzaroni *et al.*, 2021; Scholl *et al.*, 2021; Steiger *et al.*, 2022) assessed the outcome and were 'digital immigrants' of previous in-person interventions, while Biancalani (2021) investigated the intervention process. None of them were RCTs.

Two of these interventions were with monosymptomatic groups. Lecomte *et al.* (2021) reported the results of a 3-month group intervention with people with psy-

chosis symptoms and Steiger *et al.* (2022) reported a OPGI on adults with eating disorders compared to the same in-person intervention.

The other three groups included people with different psychodiagnoses. Biancalani *et al.* (2021) conducted an online psychodrama intervention for patients with symptoms of anxiety, depression, and panic disorders, Scholl *et al.* (2021) showed a brief group intervention with people with different diagnoses (anxiety, depression, Obsessive-Compulsive Disorder, Attention Deficit, and Hyperactivity Disorders), and Lazzaroni *et al.* (2021) evaluated an Eye Movement Desensitization and Reprocessing (EMDR) group intervention with adolescents with different diagnoses. Almost all the interventions used videocall except Scholl *et al.* (2021), who used group chats for therapeutic supervised self-management groups. Although this intervention was considered credible, acceptable, and expected according to the client satisfaction questionnaire, there was no significant decrease in psychiatric symptoms and no change in health-related quality of life.

In relation to monosymptomatic groups, Lecomte *et al.* (2021) demonstrated the effectiveness of group interventions in improving self-esteem and reducing negative psychosis symptoms; while Steiger *et al.* (2022) demonstrated a reduction in eating disorder symptoms and an improvement in weight levels, as was also observed for in-person interventions. In contrast, Lazzaroni *et al.* (2021) evaluated an online EMDR group intervention for adolescents and young adults with various emotional disorders that aimed to reduce the traumatic impact of the pandemic on this vulnerable target group. The intervention was helpful in reducing symptoms of anxiety and post-traumatic stress disorder, as well as reducing perceived emotional intensity. Participants also reported an increase in post-traumatic growth, but this did not correlate with the observed reduction in symptoms. In contrast, Biancalani *et al.* (2021) focused on process and found that the online psychodrama intervention was able to provide continuity and maintain a sense of group belonging, especially in emergency situations. The disadvantages were the lack of physical contact, lack of privacy, and technological and network difficulties. However, tele-psychodrama seemed to help participants pay more attention to their image and express their feelings more freely.

Hence, in summary we can say that both monosymptomatic and pluri-symptomatic group interventions via video-call showed their efficacy in reducing the symptoms of people with different diagnosis, beyond the specific type of intervention. Otherwise, chat modalities did not result effective in reducing psychiatric symptoms and in increasing in quality of life of patients. Although the majority of these studies were 'digital immigrants', a single study provided comparison results which showed the same efficacy for online and in-person intervention.

Table 2. Characteristics of intervention.

Paper number	Authors, date	Targets	Type of group	Objective	Participants x group	Immigrant/Native	Virtual Environment	Timing of the intervention	Timing of the sessions	Conduction	Theoretical Framework	Assessment	Outcome/Processes
1	Biancalani G. <i>et al.</i> , 2021	Psychiatric patients	Therapeutic (expressive)	Treat anxiety depression and panic disorders	8 – 10	Immigrant	Zoom	12 sessions weekly	120'	One trained psychodramatist	Psychodrama	Interview for post-treatment assessment	Process
2	Brouzos A. <i>et al.</i> , 2021 (a)	Adults	Therapeutic (supportive)	Alleviate the negative effects caused by COVID-19 and enhance resilience	5 – 7	Native	Skype	6 sessions 3 x week in 2 weeks	50'	3 experienced facilitator	CBT; Mindfulness and positive psychology	Pre-post test with control group comparison	Outcome
3	Brouzos A. <i>et al.</i> , 2021 (b)	Police officers	Therapeutic (supportive)	Preventing distress and enhance personal strengths	6 – 8	Native	Skype and Facebook Messenger Rooms	6 sessions 3 x week in 2 weeks	60'	3 experienced facilitator	CBT; positive psychology	Pre-post test	Outcome
4	Brouzos A. <i>et al.</i> , 2021 (c)	Adults	Therapeutic (supportive)	Alleviate the negative effects caused by COVID-19 and enhance resilience	5 – 7	Native	NA	6 sessions in 2 weeks	50'	3 experienced facilitator	CBT; Mindfulness and positive psychology	Pre-post test with control group comparison	Process
5	Celia G. <i>et al.</i> , 2021	Students	Counselling	Reduce anxiety and increase positive emotion	25 – 29	Immigrant	NA	1 x week in 4 weeks	15'	Psychologist	Brain Wave Modulation Technique (BWM-T)	Pre-post test with control group comparison	Outcome
6	Drysdale M.T.B. <i>et al.</i> , 2021	Students	Peer-support	Enhance well-being and prepare to work after graduation	10 – 17	Immigrant	NA	1 x week in 6 weeks	90'	Psychotherapist	NA	Pre-post test	Outcome
7	Gorbeña S. <i>et al.</i> , 2021	Students	Therapeutic (supportive)	Promote well-being	12	Immigrant	Google Meet	NA	NA	Six facilitators supervised by a clinical psychologist	Positive Psychology	Pre-post test	Outcome
8	Hechanova M.R. <i>et al.</i> , 2021	Adults	Peer-support	Develop adaptive coping skills	15 – 20	Native	NA	6 sessions	NA	One facilitator	Psycho-social theory for trauma; mindfulness	Pre-post test	Outcome
9	Karagiozi K. <i>et al.</i> , 2021	Caregivers of patients with dementia	Psychoeducational	To reduce emotional burden	5 – 6	Native	NA	16 sessions 1x week in 4 months	60'	Two clinical psychologists	CBT	Pre-post test	Outcome

To be continued on next page

Table 2 . Continued from previous page.

18	Smith-MacDonald <i>et al.</i> , 2022	Healthcare Providers	Therapeutic (supportive)	Enhance acceptance of moral pain	8	Native	Zoom	7 sessions 1 x week in 7 weeks	90'	Facilitators	CBT	Pre-post test	Process
19	Steiger H. <i>et al.</i> , 2022	Adults with Eating disorders	Psychoeducational	Reducing eating disorders symptoms	NA	Immigrant	Zoom	in person 10-14 weeks virtual 10 weeks	NA	Therapists	CBT	Pre-post test with control group comparison	Outcome
20	Thombs B. D. <i>et al.</i> , 2021	Patient affected by scleroderma	Peer-support	Improving coping skills	6 – 10	Native	GoToMeeting	3 x week 1 month	90'	Facilitators with systemic sclerosis.	CBT	NA	Outcome
21	Weis R. <i>et al.</i> , 2020	Students	Therapeutic (supportive)	Manage stress and improve academic and social-emotional functioning.	32	Native	Koru Mobile App	4 session x week in 2 months	75'	Koru Mindfulness counsellor	Mindfulness	Pre-post test with control group comparison	Outcome
22	Xu W. <i>et al.</i> , 2021	Adolescents	Therapeutic (supportive)	Improving positive psychological state and reducing negative psychotic symptoms	30	Native	Keep	Interventio n n.1 3 x week 8 weeks Interventio n n.2 1 x week 6 weeks	Intervention n.1 40'-60' Intervention n.2 40'-50'	NA	CBT	Pre-post test with control group comparison	Outcome
23	Zhang H. <i>et al.</i> , 2021	Adults	Therapeutic (supportive)	Improving coping and protect psychological wellbeing	25 – 29	Native	WeChat	2 weeks	120' training/psycho-education session on mindfulness 90' practices	Psychologist	Mindfulness	Pre-post test with control group comparison	Outcome
24	Ziadni M.S. <i>et al.</i> , 2021	Adults with chronic pain	Psychoeducational	Improving pain relief psychological skills	24 – 26	Immigrant	Zoom	1 session	120'	Clinical psychologists	CBT; Mindfulness	Pre-post test with control group comparison	Outcome

C) Health and well-being promotion group interventions

Several papers have shown how OPGI during the pandemic COVID-19 led to increases in psychological resources at various levels and decreases in pandemic-defined risk factors. Articles evaluating OPGI with participants with organic illnesses (chronic fatigue and systemic sclerosis) used RCT designs and showed a decrease in pain, fatigue, and sleep disturbance in subjects with chronic fatigue compared to waiting list controls (Ziadni *et al.*, 2021) and a decrease in psychopathological symptoms at 6-week follow-ups in patients with systemic sclerosis compared to usual care controls (Thombs *et al.*, 2021). In contrast, they did not find significant changes in physical functioning and an increase in physical activity.

The caregiver-specific interventions were developed according to psychoeducational principles to support the participants in coping with the stress burden. Both the groups of caregivers of dementia patients (Karagiozi *et al.*, 2021) and the caregivers of COVID-19 patients (Mirhosseini *et al.*, 2021) were observed to reduce their stress levels compared to a control group. Specifically, Karagiozi *et al.* (2021) observed the same efficacy in both the group that delivered the intervention online via video conferencing and the group that delivered it on-site. In contrast, a peer support group targeted at caregivers of traumatised children promoted parental self-efficacy and reflective functioning (Lewis *et al.*, 2022).

Another population that felt the impact of the pandemic was that of students and young adults, who were targeted with specific supportive therapeutic interventions (Gorbeña *et al.*, 2021; Weis *et al.*, 2020), peer support (Drysdale *et al.*, 2021) and counselling (Celia *et al.*, 2021). Almost all of these studies, with the exception of Xu *et al.* (2021), included a control group, although only Drysdale *et al.* (2021) proposed an RCT that compared the online intervention with the same in-person intervention. In supportive groups designed to promote dimensions of well-being and stress management, there was an increase in perceived well-being in the experimental group (Gorbeña *et al.*, 2021) and decreases in stress, anxiety and depression were observed through mindfulness interventions (Weis *et al.*, 2020, Naini *et al.*, 2021) and counselling integrated with Brain Wave Modulation Technique (Celia *et al.*, 2021) and Xu *et al.*'s (2021) intervention with adolescent students. The peer-support group (Drysdale *et al.*, 2021) also observed essentially equal effectiveness between online and in-person peer support groups in protecting psychological resources as compared with the control group.

In the general population, increases in empathy and resilience were found in support and psycho-education groups set up directly online to mitigate the potential negative mental health effects of the pandemic (Brouzos *et al.*, 2021a; 2021b; Hechanova *et al.*, 2021).

Particularly evident is the effectiveness of 'native'

OPGI in reducing symptoms of distress in people without a diagnosis, as it was observed in two RCT studies which used waiting list controls: Shapira *et al.* (2021), who reported an improvement in depressive symptoms in an older population, and Zhang *et al.* (2021) which reported the efficacy of a mindfulness-based intervention delivered in a group mode via WeChat, on psychological distress, somatization and depressive and anxious symptoms of general population. Also, in the studies by Brouzos *et al.* (2021a, 2021b), the no-treatment and no-randomized control group was found to have higher levels of depressive and anxiety symptoms compared to baseline than the experimental group.

The decrease in depressive symptoms was also seen in a group intervention for women in perinatal period compared to the same online intervention implemented before the COVID-19 outbreak (Paul *et al.*, 2021).

Some studies also considered affective dimensions, which can be defined as specifics of the pandemic and the resulting prevention and social distancing measures. OPGI for adults and older people were found to reduce perceived loneliness, although there was conflicting data on the duration of the benefits perceived by the subjects. In Shapira *et al.* (2021) study of a CBT intervention for older people, perceived loneliness scores at the one-month follow-up were comparable to pre-intervention scores. In contrast, interventions based on positive psychology (Brouzos *et al.*, 2021a; Brouzos *et al.*, 2021b; Brouzos *et al.*, 2021c) were found to reduce both the experience of loneliness and the fear of COVID-19 at the follow-up.

Hence, RCT studies suggested OPGI during the pandemic resulted effective in decreasing pain, fatigue, and sleep disturbance, unlike physical functioning in subjects with chronic fatigue, and effective in decreasing symptoms of psychological distress in the general and old population. Furthermore, peer-support intervention for students registered the same efficacy as in-person intervention. Studies which provided no randomized controls, and no comparison designs also showed the impact of OPGI in decreasing mental health risks and increasing psychological resources for different populations (students, adolescents, adults, women in perinatal period) during the COVID-19 pandemic.

D) New emerging themes for OPGI

New emerging areas of investigation appeared in OPGI assessments, such as satisfaction, acceptance, flexibility, and applicability.

Both clinical (Scholl *et al.*, 2021; Steiger *et al.*, 2022) and non-clinical populations (Brouzos *et al.*, 2021c; Thombs *et al.*, 2021; Xu *et al.*, 2021; Ziadni *et al.*, 2021) showed quite high levels of satisfaction with the group experience. In addition to satisfaction, OPGI showed reasonable flexibility (Xu *et al.*, 2021), acceptability, usability, feasibility, and applicability (Lecomte *et al.*, 2021; Smith-McDonalds *et al.*, 2022), among others. In Scholl's

group intervention using chats, an initially high group credibility and expectancy decreased after the intervention, in line with the observed non-decrease in symptoms related to anxiety and depression. In contrast, lower levels of expectancy before and after treatment correlated with higher patient health quality, especially higher perceptions of physical health, while no significant correlations were found for credibility (Scholl *et al.*, 2021).

Discussion

To our knowledge, this is the first systematic review of OPGI taking place during the COVID-19 pandemic.

A high clinical and methodological heterogeneity emerged from the current review and a medium level of quality of the studies was found, except for few studies which range in high quality. Studies included in the review proposed different types of interventions (CBT, Positive Psychology, Mindfulness, EMDR, and Integrated Models) with different targets (adults, students, adolescents, caregivers, clinical populations), and assessed several outcomes (anxiety, depression, stress, specific symptoms, loneliness, empathy and resilience) with different methodologies (pre-post-test design studies, different types of controls).

Interesting insights emerge regarding the therapeutic factors promoted by the group modality. The studies included in the review provide limited data on this topic. One of these is that of Brouzos (2021c), in which the therapeutic alliance had the smallest increase. This is consistent with previous research on the online group mode, where a lower level of therapeutic alliance was observed in the online than in the in-person intervention (Morland *et al.*, 2010). More research is needed on this point, as it was previously stated by Weinberg *et al.* (2020), considering how the therapeutic factors are the transversal aspects which represent the core focus to evaluate the quality of the intervention.

Nevertheless, the results of the studies seem to confirm the general efficacy of OPGI to support and increase the mental health of people during the COVID-19 pandemic. In particular, commenting on the results considering the study designs, RCTs showed the efficacy of OPGI in decreasing symptoms of psychological distress in the general and old population and in decreasing pain, fatigue and sleep disturbance in subjects with chronic fatigue compared to controls which did not attend the intervention. Surprisingly, a single study used an RCT design for the assessment of ‘digital immigrant’ OPGI intervention for the clinical population, and this represents a great gap for the research in this field.

Otherwise, the few results available on the comparison between online and in-person OPGI interventions do not show differences in efficacy both for decreasing depression in people with eating disorders and for increasing wellbeing in students. The same efficacy was also found

through the comparison of OPGI interventions implemented during and before the COVID-19 outbreaks, as observed in previous literature (Mancinelli *et al.*, 2021; Brusadelli *et al.*, 2021).

If we also consider studies which provided no randomized controls and only pre-post-test assessment of specific interventions, a general effect of OPGI in decreasing psychological distress and increasing the psychological resources for different populations (including clinical populations) during the COVID-19 pandemic emerged. In contrast with these results, OPGI does not result effective in decreasing physical symptoms in people with chronic fatigue and in decreasing psychiatric symptoms through chat intervention in the clinical population.

These results on the comparison between interventions seem to raise an old issue in psychotherapy research known as the ‘*Dodo verdict* metaphor’ (Luborsky *et al.*, 2002) in which all differently oriented psychotherapies are equally effective, and all deserve a prize.

Apparently, this judgement seems to hold true for OPGI as well. Indeed, the current review indicates that interventions using CBT, Positive Psychology, Mindfulness, EMDR, and Integrated Models were effective for the specific outcomes considered, which is consistent with supporting the use of these online models (Lemma & Fonagy, 2013).

To answer the question ‘What works and for whom?’ data in the present review confirms the efficacy of OPGI for various monosymptomatic groups, such as populations with eating disorders, anxiety, and depression, on par with individual online interventions (Janis *et al.*, 2021). From this research, it appears that there is interest in implementing OPGI in several clinical populations for which there are already efficacy studies in the literature, such as eating disorder patients (Bulik *et al.*, 2012), while for others, such as psychotic patients, it appeared to be questionable in previous literature (Weinberg, 2020).

A pre-pandemic systematic review (Gentry *et al.*, 2019) reported equivalent effectiveness of OPGI in different populations (*e.g.* patients and caregivers with serious illness, chronic pain, neurodegenerative disorders), with overlapping effects of in-person and online settings on stress, coping skills, and post-traumatic growth (Lleras de Frutos *et al.*, 2020), consistent with findings on individual therapy (Batastini *et al.*, 2021). To obtain more precise evidence on effective online implementation, we need to consider some aspects of the setting. In this regard, Scholl *et al.*’s (2021) asynchronous intervention showed no significant differences in decreases in anxiety and depression among participants with psychotic symptoms in a group intervention via WeChat. This confirms one of the few available data showing that video call intervention was more effective than chat communication in reducing psychological distress (Marziali & Garcia, 2011). Further comparative studies could help to understand the extent to which these observed differences between videocall and chat are due to

differences in communication, the absence of the physical presence, or the difference between orality and writing, elements that have been indicated for decades as important criteria for understanding the different dimensions through which cyber-psychotherapy moves (Suler, 2000). With the COVID-19 pandemic, the issues of online settings have come to the forefront (Weinberg *et al.*, 2020), including cybersecurity and privacy, which are not always assured.

Continuing the innovation that arises in the current review, the systematic research highlighted a range of 'digital native' interventions implemented in response to the specific psychophysical stressors exacerbated by the COVID-19 pandemic, such as increased experiences of loneliness, fear of contagion, and stress in populations most affected by the health emergency. In addition, particular attention was paid to young high school and university students, for whom various types of group interventions have been shown to be effective in promoting psychosocial resources and adaptations. This is consistent with observations in the literature (Esposito *et al.*, 2021), where this population is most accustomed to using the Internet and may prefer this modality in the future (Somaiya *et al.*, 2022). In this context, the OPGI is among the numerous forms of intervention that have moved directly to or emerged from the Internet with the COVID-19 pandemic (Batastini *et al.*, 2021). Nevertheless, scientific research on OPGI needs major improvement regarding reporting the process by which a psychological intervention is designed and/or transferred in a virtual space (Weinberg, 2020).

According to the quality assessment, the paper included in the current review shows a lack of rigor about the scientific reporting of methodology, since only 3 studies present a high quality evaluation, supporting the highlighted need to develop more focused comparative research in this field, where it is easier to incur Chronological bias, since the COVID-19 outbreak and restriction measures evolved suddenly, or Recall bias especially for longitudinal and follow-up evaluations.

The implementation of online intervention also required the assessment of new general and specific criteria such as satisfaction, credibility, flexibility, acceptability, usability, feasibility, and applicability in patients and also therapists' perspective (Messina & Loffler-Stastka, 2021). Participants' beliefs about the desired outcomes, and the role played by them and their therapists in reaching those progresses, is a key factor for symptomatology improvement, but nowadays there are a scarce availability of standardized measures to seize credibility and expectancy within therapeutic relationship (Salcuni & Lingardi, 2021). To capture the salient features of the different OPGI during the COVID-19 pandemic, we developed an *ad hoc* table (Table 2) inspired by literature about parameters for setting descriptions for in-person interventions (Lo Verso

& Raia, 1998; Vasta *et al.*, 2018). It revealed some gaps in the methodological description in scientific communication, given the dimensions arising from online work that should be reported, measured, and evaluated with more accurate methods. The possibility to distinguish between 'immigrant' and 'digital native' interventions allowed the finding that OPGI play an essential role in protecting mental health, which requires adaptation to the circumstances caused by the social isolation and contagion prevention measures (Scharff, 2018; Weinberg, 2020). 'Digital immigrant' interventions were implemented in particular with the clinical population and aimed to reduce symptoms enhancing mental health and avoid treatment interruption, while 'digital native' interventions originated from the purpose to provide support in a time of crisis and were most of all supportive and directed to caregivers and adolescents, which were considered at risk populations during the COVID-19 pandemic (Wang *et al.*, 2020).

Furthermore, the studies that reported drop-out rates stated that those rates were comparable to drop-outs for the in-person interventions. We wonder if, when evaluating the online group process, it might be interesting to create a 'digital device drop-out' index, given the impact that the therapist's or participant's loss of Internet connection has on the group process and effectiveness. The term 'black hole experience' is used to describe the emotional reaction to the absence of a response from the other person via the screen (Suler, 2000). Therefore, we can imagine that these experiences have an impact on group dynamics. In addition, most studies on OPGI did not specify whether group members participated using an active web-camera or with audio alone. It would be important to speculate on the effects of the presence or non-presence of the body, even if access is only through what is being sought.

Limits and conclusions

In conclusion, this study is not far from limitations. First, the use of different keywords could have yielded different results. Therefore, the number of articles included is relatively small, and an extension of the research in this field would be necessary to widen our knowledge about group dynamics online. Secondly, the sample size of most of the included articles is also very small and not ideal for the generalizability of the results, so future research could be greatly enriched by longitudinal study protocols, hopefully with methodological and quality improvements. In particular, to provide solid conclusions regarding the efficacy of OPGI, RCT designs should be preferred to evaluate the intervention. To date, few studies used an RCT design, and some studies do not present a control comparison at all. Paucity of RCTs for 'digital immigrants' interventions for clinical populations represents an important point to address in further research. Furthermore, clinical and methodological heterogeneity did not

help to generalize the efficacy of OPGI. Publication bias might have influenced the results, considering how it impacted the no-publication of the results which reported the inefficacy of the OPGI.

Despite these limitations, the current review shows how OPGI became a resource during the COVID-19 pandemic to respond to the emerging needs of the population and to support people with previous psychopathological diagnoses in a collective time of crisis. As with individual online interventions (Batastini *et al.*, 2021), the current results are encouraging, although further work is needed to provide scientific support for the effectiveness of OPGI compared to in-person intervention. For whom? How? And in which situations have OPGI been shown to be the best choice to improve and promote individuals' mental health?

Differentiating 'digital immigrants' and 'digital native' interventions might allow to explore which dimensions risk to be forsaken transiting to an online setting and which resources could be acquired or enhanced; even though these possibly benefit the paucity of information about group stages during the COVID-19 pandemic regarding immigrant interventions did not allow us to grasp the phase in which group interventions were located when online transition became necessary. If the literature has highlighted some limitation of online interventions, such as the limited interpersonal interactions and the inability to read and respond to verbal and nonverbal signals, one of the main resources of OPGI is the possibility to access psychological intervention for impaired individuals.

However, the current review highlights new forms of OPGI and their effectiveness with new populations. OPGI emerged as an important tool to support people under social restrictions, showing its possible beneficial application for those in isolation due to medical conditions (e.g. immunosuppression, physical motor impairment) and geographical isolation even after the COVID-19 pandemic.

Along with contextual factors related to technology environment, other individual variables - such as personal technology experience and skills - need to be considered. Further studies on process evaluation are needed to understand in-depth which group factors, such as cohesion (Burlingame *et al.*, 2018), group climate (Margherita *et al.*, 2021; MacKenzie, 1981), alliance, and empathy (Johnson *et al.*, 2005; Gullo *et al.*, 2015) had the most weight for a successful OPGI.

Considering the clinical relationship is the main transformative factor in group treatment (Burlingame *et al.*, 2018) studies which assess the relationship quality - with its specificities within member-member, member-leader, and member-group - of OPGI are needed. Moreover, starting from how web changed the statue of relationships, some open questions on online groups can also come from the analysis of e-community (Margherita & Gargiulo, 2018; Martino *et al.*, 2019; Margherita *et al.*, 2020). Among the many questions, one seems to be more urgent:

are the constructs we have for evaluating effectiveness and clinical process of a group suitable for online contexts? And how 'universality' of therapeutic factors (Yalom & Leszcz, 2005) is transformed? What is the role of specific and unspecific factors in the comparison between OPGI and in-person group interventions?

Up to now, it is unknown whether the range of group interventions reported in this work will remain an 'experiment' driven by the COVID-19 emergency, or whether this COVID-19 pandemic has paved the way to an increase and a stable use of OPGI.

In addition, the current review encourages re-thinking criteria and instruments for evaluating OPGI to provide new coordinates for clinicians.

The 'group level perspective' with its knowledge on group multi-personal processes and dynamics - such as cohesion - was considered a transversal resource to support new emerging needs during COVID-19, not only in clinical group therapy but also for orienting broad social groups (Marmarosh *et al.*, 2020). Consistently, the current review showed how research in the clinical field could have a benefit from a 'group level perspective' which allows to picture the complexity of components and factors included in the online interventions and to highlight challenges still open.

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