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ARTICLE



Using online photovoice and community-based participatory research to understand facilitators and barriers to online distance education during COVID-19

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ABSTRACT

In this study, we used online photovoice and community-based participatory research to understand and address facilitators and barriers to online distance education for college students in Turkey. Out of 260 students who consented to the study, 240 shared the most important facilitator, 190 shared the most important barriers, and 190 completed our contextual questions related to their education. We used online interpretative phenomenological analysis to identify key facilitators and barriers. Ten main facilitator themes emerged, including advantages of using Internet and technology ($n = 104$; 43%); enjoyable feelings ($n = 61$; 25%); saving time ($n = 37$; 15%); and social support ($n = 28$; 12%). Nine main barrier themes emerged, including challenges of online education ($n = 51$; 31%); psychopathology and unenjoyable feelings, thoughts, and bodily sensations ($n = 37$; 19%); Internet problems ($n = 34$; 18%); and COVID-19 restrictions ($n = 30$; 16%).

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COVID-19; online and distance education; online photovoice (OPV); online interpretative phenomenological analysis (OIPA); students; community-based participatory research (CBPR)

The COVID-19 pandemic has affected much of the world, and in many ways, including education (Kirby et al., 2023; Naidu, 2021; Tanhan, 2020), leading educational institutions to make hasty transitions to online distance education (Naidu, 2022; Tümkaya et al., 2021). As a result, the readiness of educational institutions for online distance education has become increasingly important (Doyumğaç et al., 2021; Tanhan, 2020; Waters & Johnstone, 2022). The transition to online education has had a wide range of negative experiences for students and their teachers (Doyumğaç et al., 2021; Tümkaya et al., 2021). During COVID-19, students, teachers, and faculty members have been

reported to experience psychological and various other social problems (Doyumğaç et al., 2021; Kirby et al., 2023; Tanhan et al., 2021).

This study utilized the role of visual imagery to better understand these students' lived experiences during the pandemic (Collier, 1957; Freire, 1970, 1973). In the mid-1950s, anthropological researcher Collier (1957) coined the term photo-elicitation and employed visual imagery to engage participants in the research process (Burton et al., 2017). Wang and Burris (1997) coined the term photovoice based on previous work (Collier, 1957; Freire, 1970, 1973; Wallerstein & Bernstein, 1988; Walsh, 1976; Wang & Burris, 1994; Wang et al., 1996; Weeks, 1976). Popularized by Wang and Burris (1997) as photovoice and by Tanhan and Strack (2020) as online photovoice (OPV), this research tool has seen its adoption with larger groups (e.g., Armiya'u et al., 2022; Doyumğaç et al., 2021; Öğülmüş et al., 2021; Tanhan et al., 2021; Tümkaya et al., 2021).

Traditional face-to-face photovoice and its different virtual versions (Yilmazli Trout & Yildirim, 2022) have been used in many areas and have been quite effective but not yet as much as OPV (e.g., Armiya'u et al., 2022; Genc et al., 2022). OPV has been gaining popularity in the study of different areas, including online distance education (Doyumğaç et al., 2021), sexuality (Ozkan & Tanhan, 2023), intimate relationships (Genc et al., 2022; Kizilay, 2022), special education (Öğülmüş et al., 2021), tasawwuf (spiritual terminology in Muslim culture, denoting one's inner process or strive to become aware of oneself and Allah/God) (Tanhan, 2022), and mental health (Armiya'u et al., 2022; Tanhan et al., 2021). Compared to traditional photovoice, OPV enables people from diverse groups, those who are underprivileged, those who are disempowered and might feel concerned and threatened about being in the public arena to have a voice and convey experiences to key people, whether administrators or those in authority (Tanhan, 2020; Tanhan & Strack, 2020). OPV provides anonymity while allowing volunteer participants to be as active as possible and stand in front of the public to advocate for the issues being addressed. Additionally, OPV helps to attend to the research questions based on one's contextual factors (e.g., work time, living in a rural area and not being able to get together with other people, taking care of one's house), while traditional photovoice requires an exact time and place for the group, which can be very difficult for some participants or can be difficult to attend throughout the research process (Tanhan, 2020; Tanhan & Strack, 2020).

OPV researchers (e.g., Tanhan, 2020; Tanhan & Strack, 2020) stress three main goals: (a) empowering people from an individual level to the macro level by providing avenues to articulate what is happening in their life to themselves and researchers from comprehensive (e.g., written story, photos, summary words) and effective perspectives; (b) acting with the volunteering participants to collaborate and convey these articulated experiences as easy-to-comprehend themes to related large groups, stakeholders, key people, or institutions; and finally (c) advancing already available advantages (facilitators) and addressing related disadvantages (barriers, issues).

OPV researchers can achieve these three main goals much more effectively and from a contextually sensitive perspective if they move forward in light of an active interdisciplinary social advocacy perspective (Tanhan, 2020). Tanhan and Strack (2020) suggested sharing the results in culturally and contextually appropriate multiple ways

(e.g., a humble dinner and meeting, conferences, or panels that are open to the public without any charge). Tanhan (2020) called for hybrid meetings and discussions to ensure that all could join as much as possible. In this way, facilitators or barriers related to an issue are also acknowledged at the group, community, and institution levels to reach the ultimate goal: enhancing already available facilitators and addressing related issues to increase overall well-being across all levels of the ecological systems theory (EST; Bronfenbrenner, 1977, 1979).

The purpose of this study was fourfold: identify facilitators and barriers to online distance education for college students during COVID-19; examine systems that contribute to these facilitators and barriers from the unique perspectives of college students; test the Turkish version of OPV with college students; and utilize an active interdisciplinary social advocacy perspective by conveying the findings of the present study to stakeholders so that these critical facilitators and barriers are addressed efficiently.

Theoretical framework

This study adopted EST, community-based participatory research (CBPR; Tanhan, 2020), and active interdisciplinary social advocacy as our theoretical framework.

EST

According to EST, individuals are affected by multiple factors as well as multiple systems that include a network of factors. Therefore, Bronfenbrenner (1977) and many other researchers (e.g., Doyumğaç et al., 2021; Genc et al., 2022; Tanhan, 2020) highlighted the importance of considering contexts and the ongoing dynamics of those networks. EST consists of six levels (Bronfenbrenner, 1977; Bronfenbrenner & Evans, 2000; Tanhan & Strack, 2020): microsystem (including the individual themselves and close settings such as home, school), mesosystem (the dynamics between the microsystem and the exosystem), exosystem (e.g., media, neighbors, social services, local governments, and institutions), macrosystem (e.g., culture, government, economy, and social attributes), and chronosystem (chronological events affect people across all levels), with the latter being added much later by Bronfenbrenner and Evans (2000) to stress the effect of time and historical events on people and the systems they live in. EST proposes that all these systems and subfactors are interrelated and have dynamic relationships. These systems affect individuals and communities; at the same time, individuals and communities affect the systems; however, the effect of the systems on individuals and communities is much stronger (Tanhan & Strack, 2020).

CBPR

CBPR is a key component of working with individuals and communities (Dari et al., 2019, 2021; Tümkaya et al., 2021). Researchers using CBPR collaborate with individuals and key people related to the issue to generate a more effective process to enhance overall well-being and address related issues. Many OPV researchers have benefited

from CBPR for a more contextually sensitive process (Genc et al., 2022; Tanhan et al., 2021; Tümkaya et al., 2021). A number of researchers (e.g., Armiya'u et al., 2022; Hauber-Özer et al., 2021; Tanhan & Strack, 2020; Yilmazli Trout & Yildirim, 2022) have used different concepts (e.g., partner, ally, or stakeholder development; participatory action research; school-community partnership) to indicate their collaboration with their participants and key people or partners in their communities; however, all these different concepts identify similar processes.

Active interdisciplinary social advocacy

In today's global world, researchers construct knowledge and research a lot more quickly than at any other time in history; however, it takes quite a long time for findings to advance overall well-being and address related issues at individual and/or community levels (Armiya'u et al., 2022; Genc et al., 2022). These researchers highlighted co-decisions across six EST levels and research processes. Researchers can strive to ensure that key people in charge of institutions hear about the results and understand them in a comprehensive, mindful, and effective way rather than a report with no spirit in it at all (Tanhan, 2020; Tanhan & Strack, 2020). Owing to the collaboration with volunteering participants and stakeholders, the researchers collaborating with the partners start to contribute to a more livable physical and psychological environment for all. We preferred to use active interdisciplinary social advocacy (Tanhan, 2020) for two main reasons: as the authors, we come from different disciplines, and the term has a positive and inclusive connotation. In sum, active interdisciplinary social advocacy (Tanhan, 2020) means that researchers mindfully and contextually strive to collaborate with other researchers and stakeholders from different backgrounds.

Method

In this study, we used OPV to understand the most important facilitators and barriers for online distance education processes during the COVID-19 pandemic. We collected the data in the first months of 2021.

Participants

Convenience and snowballing procedures were used to recruit participants in the study. An online form was used to seek informed consent, answer questions regarding facilitators and barriers for online distance education, and demographic information. A total of 562 college students clicked the study link from different universities in Turkey. Out of 562, only 260 consented to participate in the study. Among these participants, 240 participants completed the facilitator section, and 190 completed the barrier section, which constituted the final numbers for our study. The majority of the 240 participants came from four universities: three state universities (one each from the southeast, northwest, and central part of Turkey) and a private university from the northwest. Out of the 240 participants, the majority were from the following

departments: Arabic teaching (70), psychology (65), media and computer-related programs (55), and about 10 other departments (e.g., medicine, engineering).

A total of 190 participants completed the last part of the study—demographic questions, which were optional. Based on the responses, ages ranged from 18 to 51 ($M = 23.62$, $SD = 5.65$). Among the participants, 51 were male, 136 were female, and 3 did not specify their gender. In regard to education level, 77% of participants reported a 4-year college degree, 20% of participants reported a master's degree, and the rest reported a doctoral degree. The participants reported being a senior (30%), junior (23%), sophomore (10%), freshman (27%), and others being in their fifth year or more. Among the participants, 68% were from the middle, 25% were from the low, and 6% were from the high socioeconomic status.

Regarding religious affiliation, 64% of participants reported being close to Islam, while 35% of participants did not specify any religious affiliation. The majority of participants (84%) reported that they were not diagnosed with COVID-19 at all at the time of the survey, and 91% of participants did not work as health workers during the pandemic. Regarding where the participants lived during the pandemic, 56% were in an apartment without a garden, and 39% were in a house or apartment with a garden. The full list of demographic information is depicted in [Table 1](#) in the Results section of this study.

Procedure

Before employing OPV to conduct research to explore online distance education during the COVID-19 outbreak, we followed the necessary steps for the Institutional Review Board application and obtained ethics approval. Some college students interested in the research participated as partners in the study. Following CBPR, we assembled our CBPR research team, consisting of six students (see Acknowledgments section), student volunteers, and others who helped with the research process. With all these, we had a WhatsApp group to discuss the process and move forward. We developed the last version of the online form based on the team's feedback. Then, we started to recruit the participants.

Data collection tools: online survey

We developed an online survey that included the Institutional Review Board approval, informed consent form, OPV, a demographic information form, and COVID-19-specific questions. The participants had the chance to choose among three options to complete the survey: the written text, the video link, or the audio file. All three options included the same details and helped participants understand how to engage in the study. The survey included the Turkish version of the OPV (Tanhan, 2020) and guidelines for a more participatory experience. We aimed to prevent the loss of participants due to their possible disadvantages (e.g., low Internet connection, difficulties with reading, seeing, or hearing) by providing them with options to choose the most appropriate method for completing the survey.

Informed consent and demographic information form

The participants received detailed information on the research through the consent form. Additionally, the survey included demographic and COVID-19–specific questions (e.g., sex, education, economic problems, COVID-19 diagnosis, spirituality).

Video, audio, and written documents

We presented three different options (video, audio, and written formats) explaining the content of OPV. The first part included (a) the meaning of OPV and (b) ways for effective and meaningful participation in OPV. The video, as developed by Tanhan (2020), helps participants and researchers to understand OPV, its purposes, and how to use it more effectively. The provision of these different options is completely in line with our theoretical framework since it increases the participation of individuals with reading difficulties.

OPV procedures

The participants followed five steps (Tanhan, 2020; Tanhan & Strack, 2020) indicated below for both variables: the most important facilitator and the most important barrier.

The 1st step, facilitators (support, strength), required participants to list at least 1 and at most 10 important facilitators in their life during COVID-19. They entered these facilitators in a box provided inside the survey form.

The 2nd step, taking photos for the most important facilitator, involved taking one or more photos representing the most important facilitator.

The 3rd step, uploading photos and stories, required participants to upload only one photo by choosing the most representative one based on their perception and decision. Following this, they utilized the questions from the SHOWED acronym to write a story for the selected photo. Tanhan (2020) adapted SHOWED questions and the acronym to Turkish as GÖZSAN, which is equal to SHOWED, to ensure cultural adaptiveness. Explanation of the acronym follows:

- **S:** What do you See in the picture representing a facilitator for you or your community population' online distance education during the COVID-19 process? What do you See in the picture representing a barrier for you or your community population' online distance education during the COVID-19 process?
- **H:** What is Happening in your photograph or picture? (Briefly describe.)
- **O:** How does it relate to (y)Our life or your community?
- **W:** What is it that creates or contributes to this most important facilitator? What is it that creates or contributes to this most important barrier?
- **E:** What do you Experience (feelings, thoughts, behaviors) while taking the picture, writing your message, and submitting them?
- **D:** What can we (as mental health professionals, educators, researchers, peers) Do about this?

The 4th step, named theme(s) or metaphor(s), required participants to provide at least one and at most three words, themes, or metaphors to summarize their photo and story.

In the 5th step, named attribution of the facilitators and barriers to EST, the participants were asked to specify the levels of systems (individual or intrapsychic, microsystem, exosystem, macrosystem, or all) that contribute to the development of these facilitators and barriers from their unique perspectives. The participants followed the same steps for the most important barrier (concern, issue) after completing the most important facilitator.

Analyses: Online interpretative phenomenological analysis

In traditional interpretative phenomenological analysis (IPA; Smith, 2004; Smith & Osborn, 2003), researchers or a group of researchers with or without the participants try to derive meaning from the participants' responses or stories. However, this can affect the participants, their voices, and their perspectives (Tanhan, 2020; Tanhan & Strack, 2020). The researchers stressed that in traditional IPA, most of the time, it is very difficult, if not impossible, to involve the participants in all the meaning-making processes. And the researchers stressed how it is even more impossible during relatively more difficult times (e.g., pandemic, conflicts, many participants, and/or large groups) to make the participants part of all the meaning-making process to construct themes. Tanhan (2020) and Tanhan and Strack (2020) developed OIPA based on traditional IPA (Smith, 2004; Smith & Osborn, 2003). Since then, researchers from different disciplines (e.g., Armiya'u et al., 2022; Genc et al., 2022) have used OIPA and have suggested that researchers use OIPA when working with large groups, as in traditional IPA, it is very difficult to engage everyone in the meaning-making process. We employed OIPA to truly reflect the voices of students.

Thus, we proceeded with the analysis of the data using five steps: Two teams, each consisting of two people (1) controlled photos, captions, themes, and missing data, (2) anonymized the data for confidentiality, (3) formed main clusters for the facilitator themes based on the 4th step of OPV steps, where the participants provided at least 1 and at most 3 words, themes, and/or metaphors to summarize their facilitator's photo and story; and (4) formed the main clusters for the barrier themes based on the 4th step of OPV steps where the participants provided at least one and at most three words, themes or metaphors to summarize their barrier's photo and story. If the summary, theme, and/or metaphors at the 4th step related to facilitators and barriers were unclear, the team returned to the story to understand the words or themes in their context. The two separate analyzer research teams then compared the results of the main themes to see commonalities and differences and formed the final tables we provided below. Using OIPA allows researchers to concisely capture the words the participants would like to convey. Lastly (5), we examined how the students attributed facilitators and barriers to EST levels.

Tanhan (2020) and Tanhan and Strack (2020) explained how OIPA protects the voice and perspective of the participants rather than the researchers' biases and preferences. This becomes even more crucial and difficult considering the COVID-19 context and global conditions (e.g., not being able to meet in person, many participants, not being able to be in the same physical environment, and time management).

Trustworthiness (fidelity) and rigor

The trustworthiness of the study was provided by investigator triangulation and peer debriefing. Investigator triangulation was achieved with two independent researcher teams in the analysis process, who used the same qualitative method (O'Donoghue & Punch, 2003). The two independent research teams consisted of one of the main authors (an expert in OPV) and a counselor familiar with OPV and content analyses. Both teams performed their analyses separately. Upon completion of the analysis, the teams cross-checked the findings within and across each theme of participants to compare and develop a broader and deeper understanding. The teams found the same results, and all main themes revealed were consistent; thus, none of the findings were changed except for minor points (e.g., some main themes had a slightly different number of participants). In terms of peer debriefing, the researchers' collaboration with colleagues to review and assess the interview transcript, emerging categories, and the final report is important (Lincoln & Guba, 1985). Peer debriefing meetings were incorporated with the teams, other coauthors, and student volunteers (students in the counseling programs where we collected the data) as our allies in our study. During the meetings, participants responses and how they related to the themes were discussed. Based on all these, the teams decided on the final themes. We edited some minor aspects of the emerging themes to make them more understandable (e.g., providing a more comprehensive word for a theme).

Results

Ten main facilitator themes and nine main barrier themes emerged. We have organized our results in four tables:

- Table 1: Contextual factors related to online education conditions of students during the pandemic).
- Table 2: Facilitator themes of college students during COVID-19 (N = 240).
- Table 3: Barrier themes of college students during COVID-19 (N = 190).
- Table 4: Attribution of the facilitator and barrier themes to EST levels.

Table 1. Contextual factors related to online education conditions of participants during the pandemic (N = 190).

During the pandemic to what level did you ... (0 not at all and 100 completely)	<i>M</i>	<i>SD</i>
Faced economic difficulties	44.16	28.22
Followed social distance	80.30	19.62
Prefer online distance education to face-to-face education	44.27	33.85
Have access to the Internet	75.65	26.92
Have a personal computer or tablet	75.44	36.86
Use computer for online distance education	71.78	33.84
Have a personal smartphone	95.74	14.04
Use your smartphone for online distance education	76.83	28.47
Are satisfied with online distance education	43.57	32.94
Identify as a spiritual person	71.31	22.42
Identify as a religious person	63.33	24.70
Find religiosity and/or spirituality plays a crucial role in your life	79.35	25.03

Facilitator themes

The developers of OPV (Tanhan, 2020; Tanhan & Strack, 2020) suggested conveying the participant stories as they are without editing, except for providing anonymity.

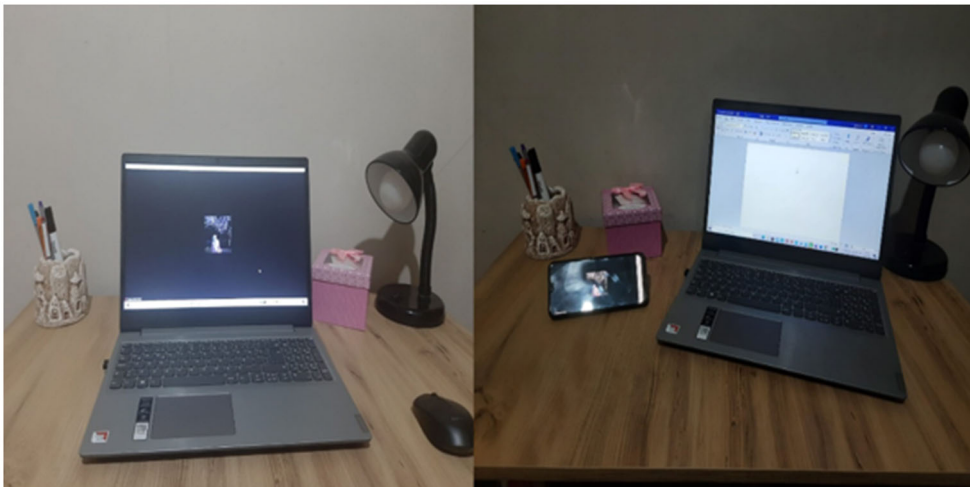
Table 2. Facilitator themes of college student during COVID-19 ($N = 240$).

Themes (10 main themes)	<i>n</i>	%
1. Advantages of using Internet and technology, having technologic devices	104	43
• Watching famous people from their social media account • Following many courses at the same time • Being able to access many different subjects • Playing video games • Learning programs • Attending courses online/via Internet • Online library • Listening missing course repeatedly • Facetimeing or video chatting with friends and family • Easy access to education/continuing training • Accessing form anywhere and access to anybody • Listening to courses anytime • Finding opportunity for professional and self-improvement • Contacting free/touchless courses • Learning knowledge, getting immersed with knowledge • Having homework inside of exams • Online exams, easy exam questions • Fast Internet connection and fast access		
2. Enjoyable feelings, bodily sensations, comfort, calmness/silence, easiness	61	25
• Being at home (both rest and study) • Cozy home • Having a private study room • Exam preparation in a calm and quiet environment • Education from home • Calm/comfortable setting • We haven't had to go to school in adverse weather conditions • Having study environment at home • Study areas		
3. Saving time, value of time, using time efficiently	37	15
• Value time for going to school • Being able to do the things that I was not able to do in the past • spending time for myself • Finding time to study for central exams to start a job under the government		
4. Social support from family and friends	28	12
• Being together and spending time with family • Being with loved ones		
5. Biopsychosocial spiritual interconnectivity (body, mind, and spirit)	21	9
• Willpower • Confidence • Mindfulness • Internal motivation • Physical and mental health • Awareness • Being in the moment and enjoy the present • Peace and feeling secure		
6. Natural environment (sea, garden, sky, greenness, lake), animals	13	5
7. Financial prosperity financial saving	13	5
8. Hobbies	12	5
• Playing instrument • Music • Poetry • Reading book • Gardening • Photograph		
9. Being hopeful, being future oriented	10	4
10. Spirituality/religiosity	10	4
• Believing in Allah/God • Contemplation upon Allah's creation and being grateful • Internal judgement • Listening myself • Knowing myself • Finding myself		

Note. 260 respondents; 18 invalid + 2 repetitions = 240 valid responses. We combined the themes represented under 3% of total number (240) following the completion of all the analyses, as Tanhan (2020) suggested.

The participant translated their story into English voluntarily. Therefore, we edited only some minor aspects, such as shortening the captions to make them more appropriate for this paper. We protected the main messages of the participants and their captions.

We paid attention to choosing four of the most comprehensive and brief captions and suitable photos to represent the most important facilitators/barriers of all the students. The participants submitted the following captions and photos to share the most important facilitators (support, strength) for online distance education during COVID-19. The captions include a few facilitator themes (e.g., advantages of using Internet and technology, enjoyable feelings, bodily sensations) from the facilitator theme (see Table 2), as well as calls for action from authorities to address some of the barriers identified by other participants in the barrier themes (see Table 3) and contextual findings (see Table 1).



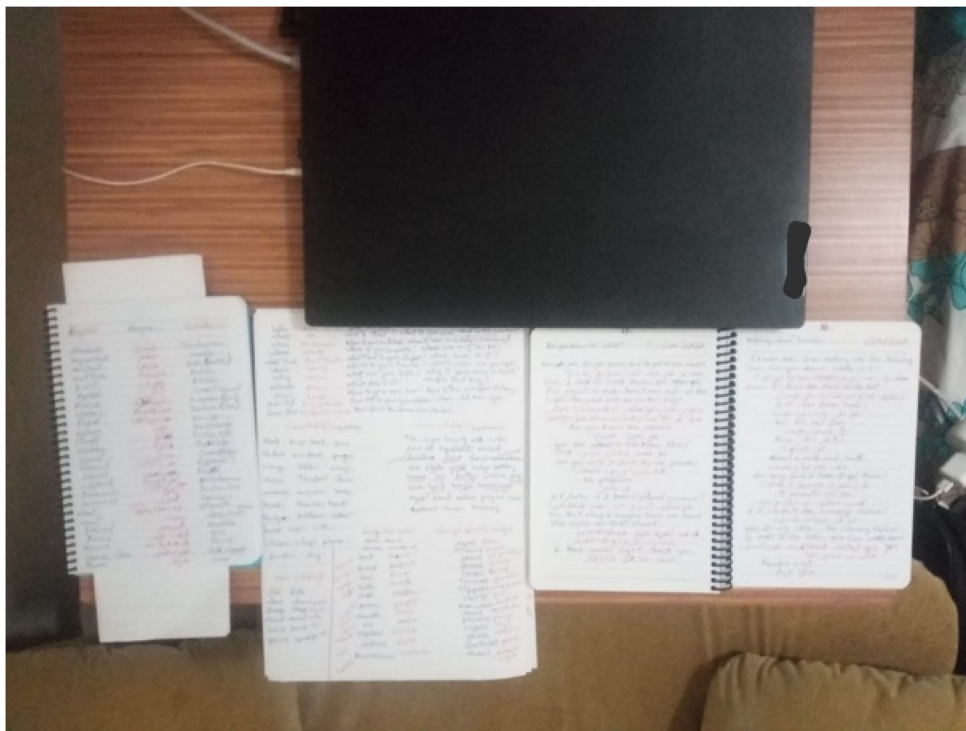
Photograph 1: The participant submitted the photo to share the most important facilitator (support, strength) for online distance education during COVID-19.

The participant submitted the following caption for the facilitator:

I am a clinical psychology graduate student. I was not well connected with technology before. I was mostly trying to get things done in traditional ways as much as possible. Being able to use technology effectively made my educational life much more effective and easier. We had many discussions during the face-to-face courses, and it was very difficult to follow the discussions and take notes. With online education, I felt like I was taking one-on-one lessons from my teacher and having better discussions. Teachers started to use more videos and visuals with online education. I am very happy to discover that I can learn information without getting tired mentally and physically with online education and that I am at peace with technology. All students better develop theoretical knowledge in psychology and get familiar with the technology. For this, students, academics, administrators, governments, and all other public and private local organizations can work together because it has many dimensions: economic purchasing power, infrastructure, design of houses, etc.

The participant submitted the following summary words for the photo and caption:

Better learning from home with technology/internet with distance education, economical purchasing power, time saving and better content learning



Photograph 2: The participant submitted the photo to share the most important facilitator (support, strength) for online distance education during COVID-19.

The participant submitted the following caption for the facilitator:

I came from Somalia to Turkey and I'm studying Arabic Language Teaching. My computer and study notes in Arabic and English make distance education easy for me. During the COVID-19, I had a lot of time to focus on my field. I am a senior student, I had the opportunity to prepare for the Foreign Language Exam. At nights I was studying both my classes, and Foreign Language Exam and English, and in the mornings I was going to work because I had to earn my own life. It is very difficult for my family to support me economically because they are not well off. Psychological, social, and moral support of my family and friends has a special place. I progressed well in both Arabic and English. I feel very happy and productive for taking part in this OPV study in the pandemic process. I encourage my student fellows to learn not only one language but also two languages. Families, teachers, university administrators, and particularly law-makers should consider the economic and social situation of people and support them accordingly in order for students to improve themselves in language and other fields and to be beneficial for humanity. All resources are enough for a more fair and livable world for everyone, if EACH OF US and particularly the executives all around the world be more careful about resources instead of wasting them.

The participant submitted the following summary words for the photo and caption:

Psychological, moral, and social support of family and friends; having plenty of time to study and work for a job/money in a workplace, distance learning, and technology

Barrier themes

In the following photos and captions, the students reported their most important barrier for themselves and how they struggled during online distance education and had some concerns (e.g., the negative effect of online distance education, and financial issues). Once again, the students called for educators and authorities to address the related barriers.

Table 3. Barrier themes of college students during COVID-19 ($N = 190$).

Themes (9 main themes)	<i>n</i>	%
1. Challenges of online education:	51	31
• Having difficulty in understanding and learning online courses • Having nobody to ask help • Attention difficulties/inability to concentrate • Inefficient education • Disrupted communication/can't speak with instructors • Having difficulty in practicum courses • Not being able to get the answers of my questions • Limited interaction between students and instructors • Not being able to do internship • Uneasy, strict, selfish instructors • Weekly intense homework • Difficult homework and exams		
2. Psychopathology and unenjoyable feelings, thoughts, bodily sensations	37	19
• Depressive mood, spiritual struggles • Blues • Anger, tantrum • Psychological breakdown • Hopelessness • Uncertainty • Uneasiness • Sorrow • Getting bored • Unwillingness • Over anxiety • Feeling stuck/be pressed • Trying to find a direction in darkness • Exiguousness, nothingness • Restricted, being schizoid • Stress		
3. Connection: Internet problems	34	18
• Poor Internet connection • Poor sound quality/unable to hear clearly • Network connection has been cutting off • Lack of Internet infrastructure and services • Power outage • Technical difficulties		
4. COVID-19 restrictions:	30	16
• Curfew for youngsters • Stay-at-home orders • Wearing mask constantly • Devoid of fresh air • Social isolation • Distance • Not being able to meet in person • Separation from loved ones		

(continued)

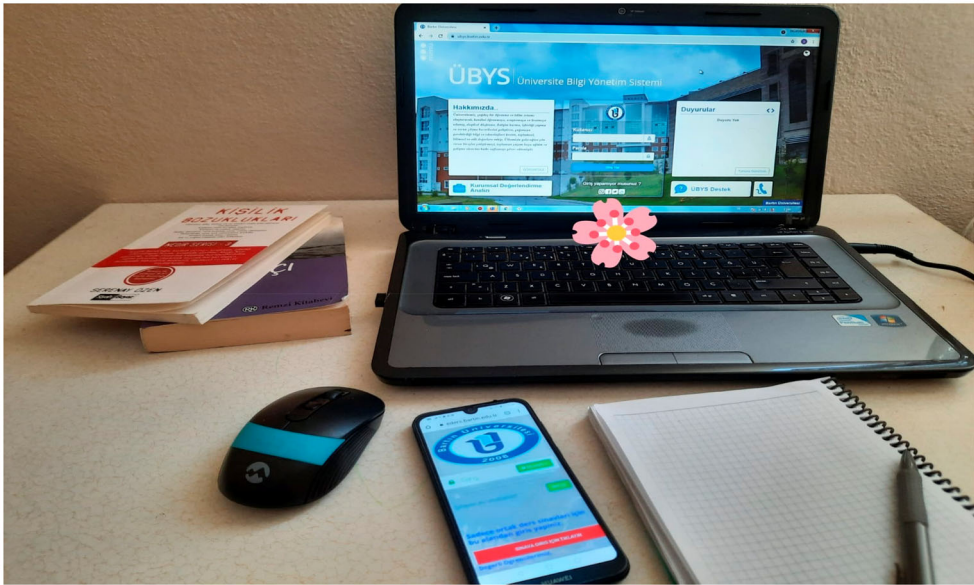
Table 3. Continued.

Themes (9 main themes)	<i>n</i>	%
• Travel restrictions • School/university closures, lack of belongingness • Home quarantine • Losing freedom • Separated from nature • Being away from school		
5. Being forced to isolate	29	15
• Become isolated • Unable to socialize • Being lonely • Being asocial • Longing and missing loved ones		
6. Economic collapse, financial incapability or difficulty	22	12
• Poverty • Lack of money • Lack of book or library • Insufficient educational materials • Being unable to renew electronic devices • Lack of Internet and electronic devices • Not everyone has the same access to technology • Not everyone got benefit from online education • Not everyone has the computer at home		
7. Home environment	15	8
• Housework • Distractions • Don't have a study room/lack of private room • Noisy and chaotic home • Being distracted by parents • Environmental stimuli/turmoil • Pressure from parents to study hard • Everybody is at home • Extended family		
8. COVID-19, pandemic, disease	11	6
9. Effects of too much Internet and electronic use	9	5
• Physical health problems (headache, eye pain, back pain, weight gain) • Technology and online addiction or its symptoms • Lack of communication		

Note. 260 respondents; 68 invalid responses + 2 repetitions = 190 total valid responses. We combined the themes represented under 3% of total number (190) following the completion of all the analyses, as Tanhan (2020) suggested.

The participant submitted the following caption for the facilitator:

I wish we had online education remained as a child dream because as students we had many difficult issues with it. I am a Psychology 3rd grade student, as a foreign national, especially far away from where I grew up, such a situation was quite difficult at the beginning. I was worried about my education, because we have very intensive practical education and socialization and interaction with people. In the first period when distance education happen, I had negative thoughts away from lessons. Students and our teachers still cannot adapt in this new situation. Technology gives me the chance to continue my education, but our traditional education habits cause some problems between technology and us. Since we switch to the distance education process, I started to spend a lot of time with mass media, and it makes me very tired in terms of my mental health. My use of social media and the number of online shopping I do has increased, technological tools such as phones, social media, computers were not important before. Now, I use these tools for both my education and meeting my distance socialization need. They became an indispensable part of my life. One of the most important reasons why this



Photograph 3: The participant submitted the photo to share the most important barrier (concern, issue) for online distance education during COVID-19.

situation disturbs me is the fact that although developing technology has many benefits, it causes both psychological and physical damage. Every gesture and every mimic of my clients who come to me is crucial for me to do my job, however, today, the online session style that develops because of pandemic conditions makes it hard to identify these crucial factors and led to an essential change in the understanding of therapy. Despite the technology adds many beauty to my life, with the developments of this pandemic, my changing lifestyle and daily activities have made me very worried about the addiction to technology. Even if the development of technology has a critical importance for human life, I think this process leads to permanent radical negative changes in the way people communicate with each other.

The participant submitted the following summary words for the photo and caption:

Lack of communication, lack of socialization, spending too much time with technology, pandemic, difficulties of distance education

The participant submitted the following caption for the facilitator:

When the pandemic started, I was a senior high school student at a boarding school. I am now in university majoring in computer programming. The night that I heard the news regarding the beginning of the pandemic in Turkey, the dormitory was already being evacuated. I immediately collected my belongings and had to leave the school, the city, and Turkey all of a sudden. I had to change a lot of cities during the pandemic. I can say that my life was hung by a thread for several months. The courses, absenteeism, lecture grades, and the university exam were all uncertain. I've experienced a lot of difficulties while coming back to Turkey for the university exam. Our flight was canceled several times, the ticket prices were very high, and the tickets were being sold out in a very short time. Since I have faced difficulties during this process, I wanted to go to university and live on campus. But it was not possible. It is very difficult for students to access computers, the internet, online courses, and paid programs. I believe that the biggest responsibility in this process belongs to managers and authorities. Students



Photograph 4: The participant submitted the photo to share the most important barrier (concern, issue) for online distance education during COVID-19.

should be provided with both financial support (computer, internet, online course content) and information or training about the new online system. During the pandemic, financial anxiety and not being able to see my future (both in my education and private life) were the factors that affected me the most.

The participant submitted the following summary words for the photo and caption:

Financial anxiety during the pandemic process, not being able to see my future (both in my education and private life), online education difficulties.

Attribution of the facilitator and barrier themes to EST levels

We examined how the students attribute the facilitators and barriers to EST levels. EST stresses that individuals and any factors in social life get affected by system levels as

Table 4. Attribution of the facilitator and barrier themes to EST levels.

EST levels Themes	Individual or intrapsychic	Microsystem	Exosystem	Macrosystem	All together
Facilitator	76% (<i>n</i> = 144)	57% (<i>n</i> = 108)	44% (<i>n</i> = 84)	27% (<i>n</i> = 52)	71% (<i>n</i> = 135)
Barrier	51% (<i>n</i> = 96)	53% (<i>n</i> = 101)	43% (<i>n</i> = 82)	36% (<i>n</i> = 69)	56% (<i>n</i> = 108)

Note. We allowed the participants to attribute the factors to more than one level; *N* = 190.

we have explained EST more in the framework section. From [Table 4](#), we can see the students' perception of how facilitators and barriers gets constructed. This is quite important to advance facilitators and address barriers related to online distance education.

Discussion

One of our purposes was to test if the Turkish version of OPV is effective. Based on our results, feedback, and the research process, the Turkish version of OPV functioned quite well. Other researchers have reported similar results (Doyumğaç et al., 2021; Genc et al., 2022). From this perspective, we have added a significant value for other researchers to use the version with their participants using Turkish.

We found 10 main facilitator themes and nine main barrier themes that affected the college students' online distance education process. In this section, we first discuss the main facilitators ([Table 2](#)), the main barrier themes ([Table 3](#)), then the results of the contextual factors ([Table 1](#)). Due to space limitations, we keep our discussion to a limited number of findings. Other researchers have found similar results during the COVID-19 process (e.g., Doyumğaç et al., 2021; Genc et al., 2022).

Facilitators

We recognized that the students were more willing to express and submit facilitators (see [Table 2](#)) compared to submitting and expressing barriers, which can be an important point, as Tanhan (2020) suggested creating space for more enjoyable experiences during a difficult time. The first main theme was the advantages of using the Internet and technology and having technological devices (43%, *n* = 104). The students talked about conveniences owing to online education, the Internet, and related factors (e.g., access to many different subjects easily, technological devices) at home. As a result, the students reported saving and using time more effectively (*n* = 37; 15%; 3rd main theme).

Somewhat related to these two themes, 61 participants (25%) expressed that experiencing enjoyable feelings (e.g., feeling rested, easy, and comfortable participating in the course, having a private and cozy environment to study, not facing difficult weather conditions, having refreshments whenever they want) was crucial for their online education. The fourth main theme we found was social support (12% of 240); the students reported that being with their families helped to facilitate and enrich their education process. Other researchers found similar findings that online education and

saving time were one of the most important supports for college students (Doyumğaç et al., 2021; Tümkaya et al., 2021).

Additionally, the students in our study reported that attending to the biopsychosocial spiritual aspect of themselves (9%), living in a natural environment (5%), having a good financial position (5%), setting time for hobbies (5%), being hopeful and future-oriented (4%), and finally having spirituality and/or religiosity facilitated the online distance education. Our results are somewhat similar to other recent research. For example, Tanhan's (2020) OPV study with college students found spirituality and/or religiosity (18% of 127), nature (17%), a good economic level (6%), and other activities related to hobbies (e.g., enjoying art 13%, reading books regularly 12%, gaining new skills like cooking 11%, doing exercise 3%) were some of the most important facilitators for their mental health.

Researchers conducting research on COVID-19's effect and facilitators found financial prosperity and nature (Doyumğaç et al., 2021; Tümkaya et al., 2021), a holistic approach to oneself and hobbies (Genc et al., 2022), and spirituality and/or religiosity (Armiya'u et al., 2022) among facilitator factors for one's life. Others have found similar facilitators in their pre-COVID-19 research, including spirituality and/or religiosity (Tanhan & Strack, 2020). These show that such facilitators are a crucial part of human beings.

Barriers

Nine main themes emerged based on 190 students' responses (see Table 3). We discuss only a few main themes due to the limited space. Of these themes, the 1st theme was facing challenges of online education (31% of 190), the 3rd theme was Internet connection problems (18%), and the 9th theme was too much Internet and electronic use (5%).

The students elaborated on these themes, and some of them connected these difficulties with other themes. For example, some students explained how these difficulties were related to a lack of financial resources (6th main theme, 12%). All these make sense because there are some issues with the Internet infrastructure in Turkey. Many people struggle with economic issues, which worsened during the pandemic. For example, as a result of our active interdisciplinary social advocacy and results and suggestions of this current study, in conjunction with some student volunteers and others interested in the topic (e.g., engineers, educators, administrators), we have started a comprehensive ecosystem, recycling, and sustainability project to (a) support students financially, (b) support non-students struggling with poverty and therefore who do recycling in very traditional, unprofessional, and difficult ways (e.g., collecting and carrying plastics and papers), (c) protect nature from pollution by enabling the recycling of left-over food and other materials (especially plastic and paper), and (d) make students part of a much more meaningful and active process. The project has been going on for more than 9 months and has been providing value from a biopsychosocial spiritual and economic perspective.

For the 2nd main theme, 19% of the students expressed how some psychopathology, unenjoyable feelings, thoughts, and bodily sensations made online education

more difficult. Some students purposefully avoid these unwanted experiences, which can be explained from an acceptance and commitment therapy perspective (Tanhan, 2020). This 2nd theme also seems to be related to the 4th (COVID-19 restrictions, 16%) and 5th (being forced to be individualized, 15%) themes. The students expressed how they have felt compelled to stay inside, far away from social relationships, and studying too much in front of electronic devices and figuring things out alone, which created or contributed to forms of psychopathology or unenjoyable experiences. Other researchers found similar results (Doyumğaç et al., 2021; Genc et al., 2022).

Another main barrier is students having a home environment that made it difficult to focus on their online education (8%). Some students lack a private room or even a corner to study when they had many people at home. A total of 6% of the students directly reported the virus itself, COVID-19, which made online education difficult. It is interesting to see the students taking time and space to focus on the virus itself. The students blamed the virus that it made life difficult for them and others. Other researchers also found similar results (Doyumğaç et al., 2021; Tümkaya et al., 2021). Similar results can be an indication of how as human beings we have biopsychosocial, spiritual, and economic aspects that are connected with one another.

Contextual factors

Based on our theoretical framework, especially the EST perspective, and the call from researchers (e.g., Armiya'u et al., 2022; Doyumğaç et al., 2021; Tümkaya et al., 2021) to use some critical contextually important questions to understand emerged themes much more contextually, we used their quantitative questions (e.g., access to the Internet and technology; see Table 1) to learn to what level (not at all: 0 and completely:100) the students experience the questions. The questions were sensitive; thereby, we made it optional to respond, and 153 students responded. It seems some of the students had some resources and some did not.

The students reported having access to the Internet at a level of 76%, a personal computer or tablet at level 75% and using them for their education (72%), and a smartphone (96%) and using it for education (77%). These show the majority of the students had some of these basic resources at some levels, and yet it is important to consider the limited access to basic resources (e.g., access to the Internet, 24%; computer or tablet, 25%; and a smartphone, 4%) in an era where global development and online distance education is becoming the norm. In Turkey, due to limited economic resources, it is quite common to see family members sharing a computer or smartphone or having limited Internet to meet their limited requirements for their education and life (Tanhan, 2020). Tümkaya and others (2021) asked the same questions in their studies and found very close results. Having very similar results in three different studies with different samples in Turkey shows that authorities need to address these issues as soon as possible from a comprehensive and contextual perspective because it seems it is not going to be easy to provide each person with a computer and well-established Internet considering economic losses ensuing from the global COVID-19 pandemic (Armiya'u et al., 2022) that have affected Turkey seriously (Tanhan, 2020).

Similarly, as indicated in Table 1, it seems there are some critical contextual issues. Our students reported that they experienced economic difficulties at a level of 44%; preferred online distance education to face-to-face education at a level of 44%; and satisfied with online distance education at a level of 44%. These values are quite low for an ideal online distance education process. These results align with the themes that we provided in Table 2 and Table 3 and discussed above. These contextual results align quite a lot with other COVID-19 studies (Doyumğaç et al., 2021; Tümkaya et al., 2021). Authorities and educators can take the results into consideration to develop impactful and practical online distance educational processes because online distance education is becoming the norm across the world (Zawacki-Richter & Naidu, 2016) and for many courses in Turkey in state universities, not to mention private universities (Tanhan et al., 2021; Yilmazli Trout & Yildirim, 2022).

In terms of spirituality and religiosity, the students identified themselves as being a spiritual person at a level of 71% and a religious person at a level of 63%. Similarly, the students reported that religiosity/spirituality plays a crucial role in their life at a level of 80%. When asked through an open-ended voluntary question about their religiosity and/or spirituality, 64% of the students reported that they were close to Islam while 35% did not specify any religious affiliation. These results are very close to Tümkaya et al.'s (2021) findings (66% identifying as Muslim).

Spirituality and/or religiosity seems to play an important factor for the students, and these results align with other COVID-19 studies (Tanhan, 2020; Tanhan et al., 2021; Tümkaya et al., 2021) and facilitator themes (see Table 2) because the students reported spirituality and/or religiosity as an important facilitator for them through open-ended questions that did not ask directly or indirectly about spirituality or religiosity. It seems the students identify themselves as more spiritual than religious, which aligns with Tümkaya et al.'s (2021) findings. Unfortunately, however, it is not uncommon to see the misuse of these concepts, causing conflicts among people who identify as spiritual and/or religious or not, and all these consume a lot of energy and time (e.g., unproductive discussions and conflicts) for people in Turkey. In addition, our participants reported that they followed physical/social distance rules during the pandemic at a level of 80%, which aligns with other research findings (Genc et al., 2022; Tümkaya et al., 2021). This disproves a general stereotype that young people do not follow the rules during the pandemic and put others at risk.

Attribution of the facilitator and barriers to EST levels

In today's global conditions and especially considering the COVID-19 global effect, we were curious how the students would attribute facilitators and barriers to EST levels (see Table 4).

The students attributed facilitators more to individual or intrapsychic levels (76%) rather than attributing to other levels: microsystems (57%), exosystem (44%), and macrosystem (27%). That means the more the system gets large and more effective the less the students attributed the facilitators. However, 71% of the students attributed the facilitators to all the systems together. Previous researchers utilizing OPV found similar results for college students in Turkey attributing facilitators for their online

education (Doyumğaç et al., 2021; Tümkaya et al., 2021) or their mental health process (Tanhan, 2020; Tanhan et al., 2021) during the pandemic to individual or intrapsychic level rather than other EST levels. It seems the students see themselves as one of the most important sources of the facilitators and at the same time acknowledge the contribution of the other factors at different levels. This interpretation goes well with the collectivistic culture of Turkey, which is moving toward a much more individualistic culture (Tanhan, 2020). We can explain this from a positive psychology perspective. Human beings are more prone to attribute positive factors to themselves, as this creates enjoyable and desired feelings (Tanhan, 2020).

In terms of barriers, in this current study, our college students attributed the barriers primarily to *all the systems together* category (56%, meaning all the EST levels) and then to microsystems (53%). Previous researchers found somewhat different results. College students in Turkey attributed their online education barriers at most to individual or intrapsychic factors (Doyumğaç et al., 2021) and microsystems (Tümkaya et al., 2021). However, an important percentage of the participants in this current study (56%) and between 42% to 52% of the studies mentioned above attributed the COVID-19 barriers related to online education or mental health to *all the systems together* category (meaning all the EST levels). All these can be a sign that students perceive their issues from multiple perspectives rather than just attributing the issues to themselves. Tanhan (2020) also found similar results, attributing this to new generations tending to develop a more individualistic culture and moving away from the traditional collectivistic culture of Turkey. Attributing barriers to other factors rather than solely intrapsychic or interpersonal factors goes well with human nature because human beings strive to protect their own survival to stay away from unenjoyable and undesired situations, thoughts, feelings, and bodily sensations (Tanhan, 2020). As the authors, we consider it quite important to see college students in this current study acknowledge and attribute the facilitators and barriers to *all the systems together* (71% and 56% respectively), as our theoretical framework stresses that biopsychosocial, spiritual, and economic overall well-being and related issues (e.g., educational, psychological) are multidimensional. For example, if some students in an area of Turkey have or lack resources, the reasons may originate from all EST levels, not solely from one of them.

Limitations

The use of OPV to collect data and OIPA to analyze the data may have affected the number and diversity of the participants and constructed themes considering the novelty of the method and lack of access to the Internet or technology that may have affected some students negatively. Secondly, it is unknown how those who did not participate, or consent may have differed from the participants. Thirdly, the limitation of having the majority of the students from three university departments (Arabic, psychology, media, and computer-related majors) cannot be ignored. Another limitation is a limited interdisciplinary social advocacy perspective; we and some volunteering students shared the results with school administrations and peers but not yet with

local or national governments and/or at a conference. We keep striving for interdisciplinary social advocacy using the results and this paper to advance overall well-being.

Implications

We suggest the following recommendations to researchers, educators, mental health providers, key authorities, and policymakers.

Implications for researchers

There are only a few OPV studies on online distance education; therefore, first and foremost, researchers could conduct more similar studies to further substantiate the findings of this research. They can try to reach out to more and diverse participants and conduct cross-cultural studies to compare countries. Additionally, future researchers can solely focus on each of the main themes to understand each theme in more detail (e.g., what financial difficulties, spirituality and/or religiosity mean to them, how enjoyable feelings and bodily sensations facilitate their education). The researchers can use OPV in mixed method and quasi-experimental studies to dive into and understand the effects of little-known topics by examining the main themes. Additionally, researchers can use grounded theory, IPA, and OIPA, with future OPV research.

Implications for educators

Educators are the gatekeepers to train key people (e.g., teachers, mental health providers, engineers, doctors) who have the most critical roles to construct a more well-grounded society. Therefore, first and foremost, educators need to understand the contextual questions, facilitators, and barriers very carefully. They, especially, need to understand and acknowledge that many students experience serious issues (e.g., lack of computer and smartphone, financial issues, unsatisfied with education). Educators can collaborate with all other key people and institutions to address these issues from a more systematic perspective. For example, educators can focus on generating some projects (e.g., as we have discussed above: *ecosystem, recycling, and sustainability project*) that involve students from a biopsychosocial spiritual, and economic perspective to address some of these issues. Acting from a positive perspective, instructors can set some time to discuss the facilitators with the students and others to deepen their understanding of the facilitators and strive to enhance them because human beings grow more with positive feedback rather than just focusing on problematic issues. Additionally, educators can improve themselves by creating some time for more effective and mindful interactions, which may improve students' learning enthusiasm and attentiveness. For example, educators can design some socio-educational games that create enjoyable, meaningful, and contextually sensitive activities.

Implications for mental health providers

Educators and mental health providers can provide much more contextually effective, affordable, and appropriate services if they cooperate. It is important for mental health providers working with students to be aware of the perceived, and especially the most important, barriers and facilitators of the pandemic to improve students' well-being. It seems the students had some crucial psychopathology and unenjoyable feelings, thoughts, and bodily sensations and found technology as one of the most important facilitators for their education. However, mental health providers and especially the ones working at state universities' mental health services in Turkey rarely use technology for mental health services (Tanhan, 2020). The providers can work to provide affordable mental health services (e.g., group counseling, bibliotherapy, providing biopsychosocial spiritual activities that construct enjoyable feelings) using technology. Lastly and most importantly, the providers can collaborate with key individuals and organizations to advocate for addressing the facilitators and barriers during the closure of campuses.

Implications for key authorities and policymakers

Local and national authorities and policymakers as part of local and national administrations can provide financial support to improve the quality and availability of online education. They can build facilities in all educational institutions for the regulation of the digital learning process. They can fund more specific OPV research to dive into the results (e.g., low satisfaction with education and financial issues) and build sustainable, meaningful, and productive projects to address issues at a larger scale to benefit as many students as possible. Authorities can provide mindfully and contextually constructed study spaces in different and convenient locations (not just city centers or wealthy locations) of the city. Finally, key authorities and especially policymakers can collaborate with all interested parties in education to act with and for students for more effective services and advocacy at all EST levels.

Conclusions

There are many facilitators and barriers for college students' online education during the pandemic in Turkey. These factors are affecting the students from an individual level to macrosystem levels. These factors are multidimensional and require a comprehensive collaboration to understand and address them. We emphasize the role of all parts (e.g., students, parents, administrators, institutions, and authorities, and policymakers) involved in education to be open to understanding and acknowledging these factors with and for the students from their own unique and comprehensive perspectives. It is crucial to attend to the students' lived experiences through shared photos, written stories, and submitted keywords or summary words or themes rather than authorities and policymakers assuming they already know what the students experience. We believe with our volunteers we contribute a significant value to the related literature by engaging students through their photos, stories, and summary words through this study. We strive to act from a contextual and mindful mindset to utilize

this research to keep an active interdisciplinary social advocacy rather than leaving the results on their own or in online research databases.

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No potential conflict of interest was declared by the authors.

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Data availability statement

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

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