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Distance Education, 2023; 44(1):40-65

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This is an Accepted Manuscript of an article published by Taylor & Francis in **Distance Education**, on 24 Jan 2023 available online:

<http://dx.doi.org/10.1080/01587919.2022.2156320>

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5 August 2024

<http://hdl.handle.net/2440/137365>

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

We collaborated with stakeholders (e.g., students, educators) from Community-Based Participatory Research (CBPR) and active interdisciplinary social advocacy perspectives and used Online Photovoice (OPV) method to *understand and address* online/distance education's the most important facilitator and barriers 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 students (27% male, 72% female) completed our contextual questions related to their education. We used Online Interpretative Phenomenological Analysis (OIPA). Ten main facilitator themes emerged: 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: 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%).

Keywords: Covid-19, Online and Distance Education, Online Photovoice (OPV), Online Interpretative Phenomenological Analysis (OIPA), Students, Community-Based Participatory Research (CBPR)

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Online Education during COVID-19 through Online Photovoice (OPV) and Community-Based Participatory Research

As human beings, we have biological, psychological, social, spiritual, and economic needs, and we constantly get affected by contextual and chronological factors in our living environments (Armiyau et al., 2022; Cashwell et al., 2013; Cashwell & Swindle, 2018; Tanhan, 2019; Tanhan & Francisco, 2019; Tanhan & Strack, 2020). These researchers stressed that we also affect these factors in our environment synchronously. As a crucial contextual and chronological factor, the COVID-19 pandemic has affected most of the world in a short time (Al-Ma'seb & Al-Sejari, 2021; Batra et al., 2021; Bunga et al., 2021; Dilekçi & Limon, 2020; Khoury et al., 2021; Knudsen et al., 2021; Manullang et al., 2021; Maphosa & Dube, 2021; Mortier et al., 2021; Nisa et al., 2021; Okoh, 2020; Ramalho et al., 2021; Redlof et al., 2021; Sidhu et al., 2021; Tanhan et al., 2020). People have experienced difficulties in many aspects of their life including education (Holtgrewea et al., 2021; Subasi et al., 2022; Ravas-Sieberer et al., 2021; Tanhan, 2020; Wößmann et al., 2020). As a result of COVID-19, schools and universities have made a compulsory transition to the online system in many countries (Armiyau et al., 2022; Subasi et al., 2022; Tanhan, 2020; Tümkaya et al., 2021).

With the ongoing pandemic, the question of whether the substructure of countries for online/distance education is sufficient and how ready the universities are for online education became an important topic (Doyumğaç et al., 2021; Tanhan, 2020). With the transition to the online system, previous online and face-to-face training studies in this field have gained importance in order to reveal the positive and negative effects of online education on students

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and educators in the process of the pandemic (Almomani et al., 2021; Tmkaya et al., 2021). Researchers studied quality of education in online learning, the quality of online learning compared to face-to-face education, the substructure of an institution or organization related to online education, and teachers and students' perceptions and thoughts about online education (Alexander & Golja, 2007; Bliuc et al., 2007; Bunga et al., 2021; Ellis, 2007; Coates et al., 2005; Lester & King, 2009; Lee & Lee, 2008; Lee et al., 2009; Levy, 2007). When we considered studies showing the positive aspects of distance education, we found positive factors like quality, flexibility, sensitivity, comfort at home, easy and multiple access to courses, communication, and technical support service in online education that positively affected students' thoughts about online education (Doyumga et al., 2021; Helgesen & Nasset, 2007; McGorry, 2003; Tanhan, 2020; Thompson & MacDonald, 2005; Subasi et al., 2022).

Some of the studies showed that there is no significant difference between online education and face-to-face education in terms of learning outcomes (Allen et al., 2002; Biner et al., 1997; Brown & Liedholm, 2002; Tanhan, 2020). However, in recent studies, some researchers stated that the transition from face-to-face education to online education can have negative effects on students in this process (Doyumga et al., 2021; Luck et al., 2019; Tanhan, 2020; Subasi et al., 2022; Tmkaya et al., 2021).

Students, teachers, and academicians have experienced convenience during online education and difficulties such as not being able to predict exactly what method teachers and academics should adopt, lack of resources and financial support, lack of substructures to mention a few (Allen et al., 2002; Doyumga et al., 2021; Tanhan, 2020; Tmkaya et al., 2021; Subasi et al., 2022). Ravas-Sieberer et al. (2021) found that 71% of children and adolescents and 75% of parents experienced distress after the first wave of pandemic. In the Covid-19 period, it is stated that many students have psychological, health, family, and social

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problems apart from education (Doyumğaç et al., 2021; Subasi et al., 2022; Tanhan, 2020; Tanhan et al., 2021). This process caused intense anxiety, fear, obsessive behavior, and technology addiction problems in some students. Furthermore, some students had economic difficulties and family conflicts (Tanhan, 2020; Tanhan et al., 2021). In line with all these studies, it is important to address the challenging and facilitating areas of online education through an innovative research method (e.g., Online Photovoice- OPV) letting people's unique perspectives and lived experiences emerging and blossoming.

Online Photovoice (OPV) and its Advantages over Traditional Face-to-face Photovoice

Previous researchers used and stressed the role of visual imagery to engage participants in more effective research processes (Collier, 1957; Freire, 1970, 1973). American anthropological researcher John Collier in the mid-1950s (Collier, 1957) coined “photo-elicitation” and employed visual imagery to engage participants in the research process (Burton et al., 2017). Wang and Burris (1997) started to use photovoice as a more effective conceptual word standing on the shoulder of previous research (Freire, 1970; 1973; Wallerstein & Bernstein, 1988; Walsh, 1991; Wang & Burris, 1994; Wang et al., 1994; Weeks, 1976). Taking such an effective method that empowered marginalized and silenced communities, Tanhan and Strack (2020) worked on traditional face-to-face photovoice to take it to a few more steps further, and they developed Online Photovoice (OPV) method. Since then, OPV has been quite much more effective and utilized much more effectively, easily, with much larger groups compared to traditional photovoice (e.g., Armiyau et al., 2022; Doyumğaç et al., 2021; Genc et al., 2022; Öğülmüş et al., 2021; Tanhan, 2020; Tanhan et al., 2021; Tanhan & Ozkan, 2020; Tümkaya et al., 2021).

Traditional face-to-face photovoice developed by Wand and Burris (1997) has some crucial limitations as provided in detail in Tanhan (2020) and Tanhan and Strack (2020). In the next lines, we listed a few of the limitations. The researchers explained how using OPV

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has been much more effective than using traditional photovoice when people go through difficult times (e.g., wars, conflicts, pandemic, endemic, lack of safety, addressing a sensitive issue like suicide or sex related topics) and do not feel safe to be outdoors and come together with other people. Traditional photovoice require participants and researchers to be together from the beginning of the study to the end. Compared to traditional photovoice, OPV enables hearing the voices and experiences of diverse groups with underprivileges and disempowerment because most of these people most of the times feel quite concerned and threatened to be out there publicly to articulate their issues (Tanhan, 2020; Tanhan & Strack, 2020). From this perspective, OPV provides anonymity while allowing volunteer participants to be as active as possible and stand in front of public to advocate for the issues being addressed. Additionally, OPV provides luxury to attend the research based on one's contextual factors (e.g., work time, living in 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 participant or can be difficult to attend all the research process (Tanhan, 2020; Tanhan & Strack, 2020). In a recent study, Ozkan and Tanhan (2022) used OPV to examine how women with different educational background in Turkey perceived their sexuality. The researchers noted that they chose OPV rather than traditional photovoice because man participants most probably would have not preferred to join the study considering the context of Turkey. In addition to all these, traditional photovoice allows eight to 13 participants and one or two researchers per group but OPV allows as many participants as possible to participate a study at one time and it requires less researchers compared to photovoice (Tanhan, 2020; Tanhan & Strack, 2020).

Quantitative or qualitative studies that have previously constructed questions and that rely only on verbal conversations, words, and/or multiple choices are more likely to form some concepts that a participants had never before (Armiyau et al., 2022; Doyumğaç et al.,

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2021; Tanhan, 2020; Tanhan & Strack, 2020; Subasi et al., 2022). Unlike such previously constructed approaches, OPV allows a participant to construct their phenomenology about a topic from their own unique perspective with no or as little manipulation as possible compared to other methods as the researchers explained. OPV activates the participant multiple intelligences (e.g., visual, hearing, touching, kinesthetic, verbal, emotional) and allows the participant to share all these aspects related to one topic in a harmony with others interested in the topic.

In this respect, we found Online Photovoice (OPV) developed by Tanhan and Strack (2020)— and adapted into Turkish by Tanhan (2020) based on traditional photovoice, which was developed by Wang and Burris (1997)— to be appropriate. Researchers from different countries and continents including Turkey have used traditional photovoice in many different areas (e.g., Adinia & Kirana, 2019; Call-Cummings et al., 2019; Catalani & Minkler, 2010; Christensen et al., 2020; D'Alonzo & Sharma, 2010; Delgado & Wester, 2020; Hergenrather et al., 2009; Redlof et al., 2021; Wester et al., 2021; Yilmazli Trout & Yildirim, 2022). Researchers called for the use of OPV as an alternative and innovative method to study different topics (Arslan et al., 2020, 2021; Barati & Amini, 2020; Kam & Fluit, 2021; Sheng et al., 2021; Sprecher, 2021). Based on all these OPV's advantages and traditional photovoice's limitations, we decided to use OPV to make our study more effective, especially with the people who may be silenced, oppressed, and under privileged from expressing their voice. We have provided more information on OPV in our theoretical framework and method sections.

Gaps in the Literature

OPV as an innovative method has recently gained popularity, and researchers have used OPV in different areas including online or distance education (Doyumğaç et al., 2021; Subasi et al., 2022), sexuality (Ozkan & Tanhan, 2022), intimate relationships (Genc et al.,

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2021), special education (Öğülmüş et al., 2021), and mental health (Armiyau et al., 2022; Tanhan, 2020; Tanhan et al., 2021). Researchers (Tanhan, 2020; Tanhan et al., 2021) referred to the lack and necessity of more specific and particular studies in, such as psychology, Arabic, elementary school teaching, media, and engineering. In sum, one of the most effective, recent, and quite innovative methods, researchers can utilize OPV by itself as a qualitative method (e.g., Doyumğaç et al., 2021; Genc et al., 2022; Ozkan & Tanhan, 2022; Öğülmüş et al., 2021) or with some other quantitative scales to construct a mixed method study (e.g., Armiyau et al., 2022; Subasi et al., 2022; Tümkeya et al., 2021). These researchers called for examining college students' online education experience during the pandemic. We came across some OPV studies focusing on counseling (Tanhan et al., 2021), social science teaching (Subasi et al., 2022); however, we were not able to find any innovative OPV research on college students especially majoring in Arabic teaching, psychology, media and computer related programs, and other departments.

Purpose of Our Study

In light of the above literature review, we aimed to investigate four main objectives in our study: (i) to identify the most important facilitators and barriers in online/distance education for college students (especially the ones in the departments of psychology, Arabic Language teaching, and media and computer related programs) during COVID-19, by using OPV, (ii) to examine the levels of systems (individual/intrapsychic, microsystem, exosystem, macrosystem, or all) that contribute to the development of these facilitators and barriers from the unique perspectives of each college students as the participants, (iii) to test the Turkish version of OPV with college students to understand online/distance education, and (iv) to utilize an active interdisciplinary social advocacy perspective by conveying the findings of the present study to related stakeholders so that these critical facilitators and barriers indicated by college students are addressed efficiently. Considering our comprehensive

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purposes, we needed to construct a well-grounded theoretical framework to mindfully and contextually conduct the study and use the result to advance already available facilitators and address the barriers.

Theoretical Framework

In this study, we constructed our framework based on the Ecological Systems Theory (EST), Online Photovoice (OPV), and Community-Based Participatory Research (CBPR), and active interdisciplinary social advocacy, as employed in the previous studies (Tanhan, 2020; Tanhan & Strack, 2020). We aimed to have a constructive understanding of the facilitators and barriers experienced by college students during COVID-19 through Online Photovoice (OPV). For this purpose, we strived to ensure the protection of the voices and experiences of the participants during the collaborative teamwork, as in line with our framework. We also highlighted our framework in the research procedures for the participants to have a more meaningful, joyful, and mindful research process. We briefly provided information about each piece of our framework. Much more detailed information is available in Tanhan (2020).

Ecological Systems Theory (EST)

Human life is not affected only by one source, based on Bronfenbrenner (1977, 1979) Ecological Systems Theory (EST), individuals get affected by multiple factors. Furthermore, individuals get affected by 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; Tanhan et al., 2021; Subasi et al., 2022) highlighted considering a person or a community within their contexts and the constant 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, etc.), mesosystem (the dynamic between the microsystem and the

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exosystem), exosystem (e.g., media, neighbors, social services, local governments and institutions), macrosystem (e.g., culture, government, economy and social attributes), and chronosystem with this last one (chronosystem: chronological events affect people across all levels) being added much later. EST proposes that all these systems and sub-factors are interrelated and have dynamic relationships with one another and they affect individuals and communities and synchronously individuals and communities affect these systems; whereas, the effect of the systems on individuals and communities is much stronger (Tanhan, 2019, 2020; Tanhan & Francisco, 2019).

Community-Based Participatory Research (CBPR)

Community-Based Participatory Research (CBPR) is a key component to work with and for individuals and communities to address mental health and educational issues (Dari et al., 2021, 2019; Doyumğaç et al., 2021; Subasi et al., 2022; Tümkaya et al., 2021).

Researchers using a CBPR perspective collaborate with individuals and key people related to the issue to generate a more effective process to enhance overall wellbeing and address related issues. Many OPV researchers benefited from CBPR for a more contextually sensitive process (Genc et al., 2022; Doyumğaç et al., 2021; Ozkan & Tanhan, 2022; Subasi et al., 2022; Tanhan, 2020; Tanhan et al., 2021; Tümkaya et al., 2021). Different researchers used different concepts (e.g., partner/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 very similar processes.

In this current study we preferred to use CBPR, as it seems much easier to pronounce as an acronym and the most commonly used especially with previous OPV studies.

Researchers using CBPR act with and for the individual and community rather than a top-down strategy, which is common to see in educational settings especially when the contextual

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factors are relatively more difficult (e.g., pandemic, lack of resources). Our research team, CBPR group, at the beginning of the study, consisted of our authors and volunteered students. However, our CBPR group has been growing with the ongoing study process because more students and other people from different institutions have been collaborating and volunteering the more they hear about the results. CBPR group also generated some new projects and research (e.g., *ecosystem, recycling, and sustainability project*) to address some biopsychosocial spiritual and economic issues raised in this current study.

Active Interdisciplinary Social Advocacy

In today's global world, researchers construct knowledge and research much more and much quicker than any other times in the history as much as we know; however, it takes quite a long time for a research to advance overall wellbeing and address related issues at individual and/or community levels (Armiyau et al., 2022; Doyumğaç et al., 2021; Genc et al., 2022; Tanhan, 2020; Tanhan & Francisco, 2019; Tanhan & Strack, 2020). Therefore, these researchers and especially Tanhan and Francisco (2019) and Tanhan and Strack (2020) stressed the role of researchers to be more active to act with and for the community following the research to contribute to construction of more appropriate contextual factors rather than staying in their ivory towers.

These researchers highlighted co-decision across six EST levels and research processes. Researchers can strive to make sure 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). In this way, a research goes beyond just research for the sake of research and academic papers. Owing to the collaboration with volunteered participants and stakeholders, the researchers collaborating with the partners start to contribute to a more livable physical and psychological environment for all. In this paper we preferred to use active interdisciplinary social advocacy (Tanhan,

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2020) rather than some other similar concepts (e.g., social advocacy) because of two main reasons: as the authors we are coming from different disciplines and the term's positive and inclusive connotation compared to other similar concepts.

In sum, active interdisciplinary social advocacy (Tanhan, 2020) means, researchers mindfully and contextually strive to collaborate with other researchers and stakeholders coming from different background because any issues one person or a community experience are dynamic as EST stresses. And following this collaboration, researchers strived to act from an active interdisciplinary social advocacy perspective try to go beyond just conducting, publishing, and storing the paper. We have been striving to be proactive and reach out to each effective individuals, institutions, stakeholders and any others through multiple avenues and aspects (e.g., conference, news, meetings, interview, social media, papers) to enhance overall wellbeing and address related issues. We have provided a little more information in implication section.

Online photovoice (OPV)

Traditional face-to-face photovoice (Teti et al., 2021) has been used in many areas and has been quite effective. However, standing on the shoulder of traditional photovoice, Tanhan and Strack (2020) contextually and mindfully studied the photovoice and improved some of its most crucial limitations (e.g., allowing limited number of participants, requiring too much time, lack of full anonymity). Following this contextual and mindful intensive work, Tanhan and Strack (2020) developed Online Photovoice (OPV) with some greater advantages compared to traditional photovoice as we have provided them in the introduction. Tanhan (2020) adapted OPV to Turkish from a contextually sensitive perspective.

OPV researchers stress three main objectives: (a) empowering people from individual level to macro level through providing avenues to articulate what is happening in their life to themselves and researchers from a comprehensive (e.g., written story, photos, summary

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words) and effective perspective; (b) acting with the volunteered participants to collaborate and convey these articulated stories and words as main and easy to comprehend themes to related large groups, stakeholders, and key people or institutions; and finally (c) advancing already available advantages (facilitators) and address related disadvantages (barriers, issues).

OPV researchers can do all these much more effectively and from a contextually sensitive perspective if they act from an active interdisciplinary social advocacy perspective (Tanhan, 2020). Tanhan and Strack (2020) suggested doing this advocacy through sharing the results in culturally and contextually appropriate multiple ways (e.g., a humble dinner and meeting, conferences or panels that are open to public without any charge) and Tanhan (2020) called for hybrid meeting and discussions to make sure all interested ones are able to join as much as possible. In this way, facilitators or barriers related to an issue are also acknowledged at group, community, and institutions levels to reach out to ultimate goal: enhancing already available facilitators and addressing related issues to increase overall wellbeing across all EST levels. Taking all these into account, we believe using OPV, CBPR, EST, and active interdisciplinary social advocacy perspectives to shape our framework and research process can provide a significant value to understand online/distance education.

Method

In this research, we designed each part of the methodology employing the framework mentioned above. Researchers primarily looked at the literature on (a) the mental health of college students, with a specific focus on the period during the COVID-19 pandemic, and (b) the utilization of OPV in college samples.

Participants

The participants were recruited by both convenience and snowballing sampling and we used an online form that included informed consent form, questions for facilitators and barriers for online/distance education, and demographic information. For the present study,

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562 college students clicked on the study link from different universities in Turkey. Out of 562, only 260 consented to this study. Of 260, 240 participants thoroughly completed the facilitator and 190 completed the barrier sections, which constituted our final numbers for the study. We had the majority of 240 participants from four universities including three state universities (one from the southeast, one from the northwest, one from the middle part of the country) and one (from the northwest part of the country) a private university. Out of 240 participants, the majority were from the following departments: Arabic teaching (70), psychology (65), media and computer related programs (55), and other departments.

Similarly, 190 participants completed the last part of the study- demographic questions- which were optional. Based on 190 participants' responses for demographic questions, ages changed from 18 to 51 ($M = 23.62$, $SD = 5.65$). Among 190 participants, 51 of them were male, 136 of them were female and 3 of them 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 of the participants reported a doctoral degree. In our sample, the participants were senior at 30%, junior at 23%, sophomore at 10%, and freshmen at 27%. There were also 6% of the student participants were not categorized as they had been studying for more than 5 years, and the rest of the participants reported that they were not a student. Among the participants, 68% were from the middle Socio Economic Status (SES), 25% were from the low SES, and 6% were from the high SES.

Regarding the religious affiliation, 64% of participants reported that they were 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 the COVID-19 at all at the time of the survey, and 91% of participants did not work as a health worker during the pandemic. Regarding places, where the participants lived in the pandemic, 56% were in an apartment without a garden and 39% were in a house or apartment with a garden. The full list

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of demographic information is depicted in depicted in Table 1 in the Results section of this study.

Procedure

Primarily, we reviewed the literature on online/distance education, mental health, OPV, and the functioning of college students during the COVID-19 outbreak in Turkey. Recent studies using OPV have found evidence for the higher likelihood of mental health problems among university students experiencing biopsychosocial, spiritual, economic, and educational challenges (Doyumğaç et al., 2021; Subasi et al., 2022; Tanhan, 2020; Tanhan et al., 2020, 2021; Tümkaya et al., 2021). They suggested employing OPV to conduct more research to explore online/distance education during the COVID-19 outbreak and they also stressed mental health of the students. In line with the suggestions from the literature, we followed the necessary steps for the Institutional Review Board application and obtained ethical approval. Some college students interested in the research participated as partners in the study. Thus, we found our research team, CBPR group including the authors and volunteered students and a few other interested in the study, from the CBPR perspective. Our CBPR group has been growing the more we reach out to others to share the results and advocate for advancing the facilitators and address barriers. Following the completion of the teamwork on the research process in collaboration, we developed the last version of the online form to recruit participants.

Data Collection Tools: Online Survey

We developed an online survey that included the IRB approval, informed consent form, OPV as well as demographic, 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,

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as well as guidelines assisting for a more participatory experience, adapted by Tanhan (2020). Researchers 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 the opportunity to choose the most appropriate method for themselves among the three survey options. Thus, providing several means to complete the survey aided the process of OPV participation.

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) to the participants explaining the content of OPV. The first part included (a) the meaning of the OPV and (b) ways for effective and meaningful participation in OPV. The video as developed by Tanhan (2020) aimed to facilitate the understanding of OPV by participants and researchers and participation in OPV research. The provision of these different options is completely in line with our theoretical framework since it increases the participation of individuals with reading difficulties. Given the increase in participation when provided with these different options, Tanhan and Strack (2020) and Tanhan (2020) strongly suggest the inclusion of different versions (e.g., text, audio) while using OPV in future studies.

Online Photovoice (OPV) Procedures

We applied the same five procedures used in a recent study by Tanhan (2020) to facilitate effective, enjoyable, and easy engagement. The details of the procedure are provided in the study conducted by Tanhan (2020). The participants followed the five

procedures indicated below for both of the variables, the most important facilitator and the most important barrier, respectively.

The 1st step, named *facilitators (support, strength)*, required participants to list, at least one and at most ten, important facilitators in their life during COVID-19. They entered these facilitators in a box provided inside the survey form. The participants could arrange their own pace since there is no limit to time. The 2nd step, *taking photos for the most important facilitator*, involved taking one or more photo(s) 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 (see details in Tanhan, 2020). You can find the explanation for the acronym below:

S: What do you **See** in the picture representing a facilitator for you or your community population’ online/distance education during COVID-19 process? What do you **See** in the picture representing a barrier for you or your community population’ online/distance education during COVID-19 process?

H: What is **Happening** in your photograph/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, etc.) **Do** about this?

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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 Ecological System Theory (EST)*, the participants were asked to specify the levels of systems (individual/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*) following completing the most important facilitator. Tanhan (2020) provided more detailed information on these procedures.

Analyses: Online Interpretative Phenomenological Analysis (OIPA)

In the present study, we employed Online Interpretative Phenomenological Analysis (OIPA; Tanhan, 2020; Tanhan & Strack, 2020) to truly reflect the voices of students. The researchers improved OIPA and strongly suggested using OIPA rather than traditional Interpretative Phenomenological Analysis (IPA; Smith, 2004; Smith & Osborn, 2003). In traditional IPA, researchers or a group of researchers with or without the participant(s) try to make a meaning out of the participant responses or stories; however, this can affect the participant, their voices, and their perspectives if it is possible to make meaning with them (Tanhan, 2020; Tanhan & Strack, 2020). And the researchers stressed how it is most of the times (e.g., difficult times, pandemic, conflicts, working with many participants and/or large groups) almost impossible to make the participants part of the meaning making proceses to construct themes. Therefore, the researchers improved and used OIPA. Since then many researchers from very different disciplines used OIPA rather than IPA and suggested future researchers to use OIPA especially when working with large groups and it is very difficult to engage all in the meaning making process (e.g., Armiyau et al., 2022; Doyumğaç et al., 2021; Genc et al., 2022; Ozkan & Tanhan, 2022; Subasi et al., 2022; Tanhan et al., 2021).

Thus, we proceeded with the analysis of the data using five steps: Two different teams each consisting of two people (I) controlled photos, captions, themes, and missing data, (II) anonymized the data for confidentiality, (III) formed main clusters for the facilitator themes based on the 4th step of OPV steps where the participants provided at least one and at most three words, themes and/or metaphors to summarize their facilitator's photo and story; and (IV) 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 fourth step related to facilitators and barriers were not clear, the team went back 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 capture the most pithy words that the participants would like convey to all others. Lastly, we (V) examined how the students attributed facilitators and barriers to EST levels.

Tanhan (2020) and Tanhan and Strack (2020) explained how OIPA is protecting the voice and perspective of the participants rather than the researchers' biases and preferences. And in OPV it is very important to protect the voice and perspective of the participants. This gets even more crucial and difficult considering the COVID-19 context and today's global conditions (e.g., not being able meet in person, many participants, not being able to be in the same physical environment, time management). The researchers provided an explanation of OIPA in more details.

Trustworthiness (Fidelity) and Rigor

The trustworthiness of the present 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,

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2003). The two independent researchers consisted of one of the main authors expert in OPV and one counselor familiar with OPV and content analyses. Both themes did their analyses separately. Upon completion of the analysis, researchers cross-checked the findings within and across each theme of participants to compare and develop a broader and deeper understanding. For this study, researchers 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, it requires the researchers' collaboration with the colleagues to review and assess the interview transcript, emerging categories, and final report (Lincoln & Guba, 1985). For this study, peer debriefing meetings were incorporated with the teams, other coauthors, and volunteered students as our allies in this study, who were graduate students in the counseling programs where we collected the data. During the meetings, participants' responses and how they related to the themes were discussed. The teams decided final themes and through the briefing discussions, we edited some minor aspects.

Results

In this section, we provided our results in four tables: Table 1 (descriptive for some contextual factors related to online education conditions of participants during the pandemic), Table 2 (facilitators themes of college student during Covid-19), Table 3 (barriers themes of college students during Covid-19), and finally Table 4 (attribution of the facilitator and barrier themes to EST levels).

Table 1. Descriptive for some contextual factors related to online education conditions of participants during the pandemic ($N=190$)

During the pandemic to what level 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

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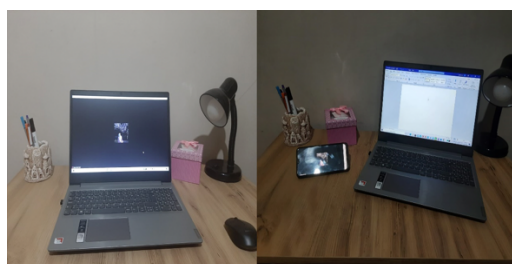
Have access to internet	75.65	26.92
Have a personal computer or tablet	75.44	36.86
Use computer for online/distance education	71.78	33.84
Have a personal smartphone	95.74	14.04
Use your smartphone for online/distance education	76.83	28.47
Are satisfied with online/distance education	43.57	32.94
Identify yourself as a spiritual person	71.31	22.42
Identify yourself as a religious person	63.33	24.70
Find religiosity/spirituality plays a crucial role in your life	79.35	25.03

Table 2. Facilitators themes of college student during Covid-19 (N= 240)

Themes (10 main themes emerged)	n	%
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		
- Facetiming 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		
- Contact free/touchless courses		
- Learning knowledge, getting immerse 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		
- fining 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		

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



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 story/caption for the facilitator: The developers

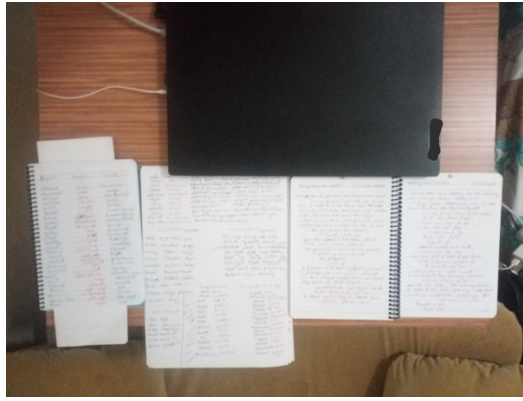
of OPV strongly suggest conveying the participant's stories as they are without editing except Tanhan, A., Boyle, C., Sogut, Y., Tas, I., Cashwell, C. C., Genc, E., & Karatepe, H. T., (2023). Using Online Photovoice and community-based participatory research to understand facilitators and barriers to online distance education during COVID-19. *Distance Education*.
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for providing anonymity (Tanhan, 2020; Tanhan & Strack, 2020). The participant translated their story to English voluntarily. Therefore, the researchers did not edit this and the following stories.

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 discussion 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 to develop theoretical knowledge in psychology and get familiar with 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 story/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”

Table 3. Barriers themes of college students during Covid-19 (N= 190)

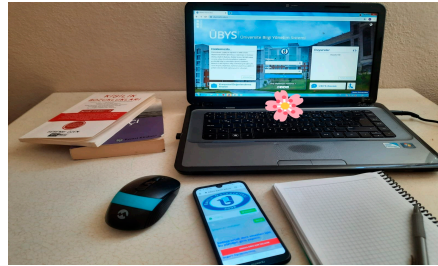
Themes (Nine main themes emerged)	<i>n</i>	<i>%</i>
1. Challenges of online education:	51	31
- Having difficulty in understanding and learning online courses		
- Having nobody to ask help		
- attention difficulties/ inability to concentrate		
- inefficient education		
- disrupted communication/ can't 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		
- get 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		

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Themes (Nine main themes emerged)	<i>n</i>	<i>%</i>
<ul style="list-style-type: none"> - lack of internet infrastructure and services - power outage - technical difficulties 		
4. Covid-19 Restrictions:	30	16
<ul style="list-style-type: none"> - curfew for youngsters - Stay home orders - Wearing mask constantly - Devoid of fresh air - Social isolation - Distance - not being able to meet in person - separation from loved ones - travel restrictions - school/university closures, lack of belongingness - home quarantine - losing freedom - separated from nature - being away from school 		
5. Being forced to be individualized	29	15
<ul style="list-style-type: none"> - Become isolated - Unable to be socialized - Being lonely - Being asocial - Longing and missing loved ones 		
6. Economic collapse, financial incapability/difficulty	22	12
<ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> - 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
<ul style="list-style-type: none"> - Physical health problems (headache, eye pain, back pain, weight gain) 		

Themes (Nine main themes emerged)	<i>n</i>	<i>%</i>
- Technology and online addiction or its symptoms		
- Lack of communication		

*260 responses; 68 invalid responses+2 repetitions = 190 total valid responses; we combined the themes represented under 3% of total number (190) following the completing all the analyses as Tanhan (2020) suggested.



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

The participant submitted the following story/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

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distance socialization need. They became an indispensable part of my life. One of the most important reasons why this 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”



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

The participant submitted the following story/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 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.”

In the last, fourth table, we have 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 we have explained EST more in the framework section. From the following table, we can see the students' perception of how facilitators and barriers gets

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constructed. This is quite important to advance facilitators and address barriers related to online/distance education.

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

EST Levels Themes	Individual/ 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)

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

Discussion

One of our purposes was to test if Turkish version of OPV is effective. Based on our results, feedback, and all the research process, the Turkish version of OPV functioned quite well. Some other researchers used the version reported the similar results (Doyumğaç et al., 2021; Genc et al., 2022; Subasi et al., 2022). From this perspective, we have added a significant value to invite other researchers to use the Turkish version with their participants using Turkish. We came across a few researchers who get to know OPV through our study and started to conduct their study on (e.g., spirituality, infertility) using the Turkish OPV version.

We had 10 main facilitator themes and nine main barrier themes that affected the college students' online or 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 restrictions on space, we kept our discussion to a limited number of findings. Other researchers have found similar results during the COVID-19 process (e.g., Genç et al., 2021; Doyumğaç et al., 2021; Tanhan, 2020; Tanhan et al., 2021). Overall, the wider literature review supports the findings of the present study.

Discussion of Facilitators

Tanhan, A., Boyle, C., Sogut, Y., Tas, I., Cashwell, C. C., Genc, E., & Karatepe, H. T., (2023). Using Online Photovoice and community-based participatory research to understand facilitators and barriers to online distance education during COVID-19. *Distance Education*.
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Ten main facilitator themes emerged based on the 240 participants' submitted themes. We recognized that the students were more willing to express and submit facilitators 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. We selected and discussed some of the main facilitators due to limited space. The first main theme was advantages of using internet and technology and having technologic devices (43%, n = 104). The students talked about conveniences owing to online education, internet, and related factors (e.g., access to many different subjects easily, technological devices) at home at. As a result of this convenience, the students reported saving time and using time more effectively (n = 37; 15%; third main theme).

Somewhat related to these two themes, in our current study, 61 participants (25%) expressed that experiencing enjoyable feelings (e.g., feeling rested, easy and comfortable to participate 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 being with their family helped to facilitate and enrich their education process. Some other researchers found similar findings that online education and saving time was one of the most important support for college students (Doyumğaç et al., 2021).

Additionally, the students in the present 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 spiritual/religiosity, facilitated the online or distance education process during the pandemic. These results are somewhat similar to other recent research. For example, Tanhan (2020) in their OPV study with college students found spirituality/religiosity (18% of 127), nature (17%), a good economic level (6%), and other

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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.

Very similar to our results, some other researchers, conducting research on COVID-19's effect and facilitators, found financial prosperity (19% in Doyumğaç et al., 2021), nature (11% in Doyumğaç et al., 2021), a holistic approach to oneself (Genç et al., 2021), hobbies (Genç et al., 2021), and spirituality/religiosity (Armiyau et al., 2022; Genç et al., 2022) were facilitator factors for one's life. Some researchers found some similar facilitators in their pre-COVID-19 research including nature (Maller et al., 2006), hobbies (Lee McIntyre et al., 2004), and spirituality/religiosity (Cashwell & Swindle, 2018; Cashwell & Young, 2011; Cashwell et al., 2013; Young et al., 2000). These show, such facilitators are crucial part of human organism. We did not find many studies on the role of hobbies in people life among the pre-pandemic research while founding more among during the pandemic research.

Additionally, Subasi and others (2022) found very similar support systems including technology, (37% of 119 students), comfort at home, (22%), being with family and their support, and (16%), having suitable studying opportunities. (16%). Similarly, Tanhan (2020) claimed that of 127 college students, 33% reported mindfulness, 18% social support, and 10% technology, 15% use of time more efficiently, 8% peace with nature, 4% having books and supportive teachers, 3% providing support to one another, and 3% taking responsibility. Different from other researchers, in Subasi et al. (2022), the students also reported being able to cheat or copy from some other fellow students facilitating their online education (3%).

These researchers found these factors to be effective for college students' online or distance education or for some other aspects of life (e.g., mental health, intimate relationship). All these show human nature is very similar at the core while the ratio of factors and their effect, change from sample to sample and from context to context as

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suggested by other researchers (Tanhan, 2019, 2020; Tanhan et al., 2020). Our main themes are appropriate especially from a contextual comprehensive and holistic perspective. In addition to all of these, it is important to note that the students did not express already approved, used, or upcoming Covid-19 vaccines as one of the facilitators.

Discussion of Barriers

Nine main themes emerged based on 190 students' responses. We only discussed a few main themes due to the limited space. Of these themes, the first theme was facing challenges of online education (31% of 190), the third theme was internet connection problems (18%), and the ninth theme was too much internet and electronic use (5%). The students elaborated on these themes, as provided in detail in Table 3, and some of them also connected these difficulties with other themes. For example, some students explained how these difficulties were related to a lack of financial resources (our sixth main theme, 12%). All these make sense because there are some issues with the internet substructure. And 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, with some volunteered students, our authors, and other key ones (e.g., engineers, educators, administrators) interested in the topic we have started a comprehensive *ecosystem, recycling, and sustainability project* to a) support students financially, b) support non-students who were struggling with poverty and doing recycling for their life in very non-professional and difficult ways, c) protect nature from pollution by enabling recycling left-over food and other materials (especially plastic), and d) make students part of a much more meaningful and active process. This project has been going on for more than six months and has been providing producing value from a biopsychosocial spiritual and economic perspective starting from an intrapersonal/individual level to macro level. We are also planning to conduct the effect of this recycling project through an OPV study as well.

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Some of the students also expressed how these themes and some psychopathology or unenjoyable experiences made online education more difficult (second main theme, 19%). This second theme also seems to be related to the fourth (Covid-19 Restrictions, 16%) and fifth (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 forms of psychopathology or unenjoyable experiences. Some other researchers also found similar results (Doyumğaç et al., 2021). Some other researchers also stressed how to pay attention to design buildings more effectively (Azak & Tekdemir, 2021; Tanhan, 2020). Tanhan (2020) and Tanhan et al. (2020) provided detailed information on how as human beings we had biopsychosocial spiritual and economic aspects that were deeply interrelated dynamically. Tanhan (2019) also, theoretically from a contextual and comprehensive Acceptance and Commitment Therapy (ACT) perspective, explained how people are developing wellness or psychopathology based on their biopsychosocial, spiritual, economic, and chronological situations.

Another main barrier theme is students having a home environment that made it difficult to focus on their online education (8%). Six percent of the students directly reported the virus itself, Covid-19, that made online education difficult and this theme was at the core of all other themes and this study. And it is interesting to see these students directly taking time and space to focus on the virus itself. The students talked about how the virus made life difficult for them and others, and yet not directly expressing whether they or their families had it. Some other researchers also found very similar results (Doyumğaç et al., 2021; Tanhan, 2020).

Subasi et al. (2022) found the following concerns: insufficient economic resources (26%) and internet infrastructure (21%), social isolation from life and environment (16%),

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inefficiency of distance education (13%), inequality of opportunity in online education (12%), inability to practice for courses (11%), psychological factors like feeling unmotivated and not feeling well (9%), addiction to technological devices (4%), lack of communication and misunderstanding (3%), not having a set hour for classes (3%), lack of ability to focus on courses (3%), family issues (3%), and insincerity and insufficiency of professors (3%).

Tümekaya et al. (2021), in their research on online education, reported the following facilitators: access to education online (37% of 153), technology and technological devices (30%), private space to study (10%), saving time (7%), hobbies (6%; e.g., gardening, sport, healthy eating, reading books), financial resources (6%), time spent with family (6%), supporting others and environment (4%), social isolation (4%, e.g., social responsibility, masks), setting time for oneself (3%), and plan for future (3%).

Our findings align with other researchers' findings, though there are some different themes and percentages. Similar results can be an indication of how as human beings we have biopsychosocial, spiritual, and economic aspects that are connected with one another.

Discussion of Contextual Factors

Based on our theoretical framework, especially EST perspective, and previous researchers' (Subasi et al., 2022; Tümekaya et al., 2021) call to use some critical contextually important questions to understand emerged themes much more contextually, we used these researchers' quantitative questions (e.g., access to internet and technology; See Table 1) to learn to what level (not at all: 0 and completely:100) the students experience the questions. In this way, we could compare these quantitative results with our qualitative themes and other researchers' qualitative and quantitative results. The questions were sensitive; thereby, we made it optional to respond. In light of the result we provided in Table 1, 153 students responded. It seems some of the students have some resources and some do not. The students reported having access to the internet *at a level of 76%*, a personal computer or tablet at a

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level of 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, smartphone or limited internet to be able to meet their limited requirements for their education and life (Tanhan, 2020). A few researchers (Subasi et al., 2022; Tümkaya et al., 2021) asked the same questions in their studies and found very close results. Having very similar results in three different research with different samples in Turkey show that the 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 a computer and well-established internet considering global economic recession that has affected Turkey seriously.

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 which was discussed in detail above. These contextual results also align quite a lot with some other Covid-19 studies (Subasi et al., 2022; Tanhan, 2020; Tümkaya et al., 2021). Authorities and educators need to take the results into consideration to improve contextually much more effective online/distance education processes and environments because online/distance education seems to be

In terms of spirituality and religiosity, the students reported that they identify themselves as being a spiritual *at a level of* 71% and religious (63%) person. 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 religious/spirituality, the majority of the students who responded reported as being Islam. It seems spirituality/religiosity plays an important factor for the students and these results align with some other Covid-19 (Subasi et al., 2022; Tanhan, 2020; Tanhan et al., 2021; Tümkaya et al., 2021) literature and Table-2 because the students reported spirituality/religiosity as an important facilitator for them without any previously constructed questions. It seems the students identify themselves as a spiritual more than a religious person, which aligns quite a lot with the other researchers asked the same questions (Subasi et al., 2022; Tümkaya et al., 2021). Based on this, educators, mental health providers, authorities, key people in communities could explore this topic more and find ways to utilize these aspects in contextually sensitive and appropriate ways rather than randomly using these words and causing difficult issues (e.g., misuse of these concepts, creating conflicts among people identify themselves as spiritual and/or religious or non-so) among people, which is quite common to see and take a lot energy at country level for days in Turkey (Tanhan, 2020).

In addition, our participants reported that they followed physical/social distance rules during the pandemic at a level of 80%, which aligns with some other research (Subasi et al., 2022; Tümkaya et al., 2021). This disapproves a general stereotype that young people do not follow rules during the pandemic and risk others. It can be very helpful to understand what keeps the students from a higher level of following the physical/social distance rule to go through the rest of the pandemic and be prepared for future such difficult eras.

Discussion of Attribution of the Facilitator and Barriers to EST Levels

In today's global condition and especially considering the historical COVID-19 pandemic's 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/intrapsychic levels (76%) rather than attributing to other levels microsystems (57%), exosystem (44%), macrosystem (27%). That mean 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 utilized OPV found very similar results that the college students in Turkey attributing facilitators for their online education (Doyumgaç et al., 2021; Tümkaya et al., 2021) or their mental health process (Tanhan, 2020; Tanhan et al., 2021) during the pandemic at most to individual/intrapsychic level rather than other EST levels. However, Subasi and others (2022) found the college students in Turkey attributed the facilitators for their online education during the pandemic at most to microsystems (56%) and then to individual/intrapsychic factors (50%). And it is important to know that these two levels are much closer to one another, compared to other EST levels, and individual/intrapsychic level/factors and microsystem level can be combined because microsystem includes individual/intrapsychic factors.

It seems the students see themselves as one of the most important source of the facilitators and the same time acknowledge the contribution of the other factors at different levels. This interpretation goes well with collectivistic culture of Turkey which moves quite quickly toward a much more individualistic culture. This also can be explained from a positive psychology, human beings are more tend to attribute positive factors to themselves, as this creates enjoyable and desired feelings (Tanhan, 2019; Tanhan et al., 2020).

In terms of barriers, in this current study, our college students attributed the barriers at most first to *all together* category (56%, meaning all EST levels) and then to microsystem (53%). Previous researchers found somewhat different results that college students in Turkey

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attributed their online education barriers during the pandemic at most to individual/intrapsychic factors (Doyumğaç et al., 2021), microsystems (Subasi et al., 2022; Tümkaya et al., 2021), and their mental health barriers during the pandemic to individual/intrapsychic factors (Tanhan, 2020; Tanhan 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 online education or mental health related COVID-19 barriers to *all together* category (meaning all the EST levels). All these can be a sign of that people in Turkey see their issues from a multiple perspective rather than just attributing the issues to themselves. This goes well with the Turkey collectivistic culture and yet rapidly moving toward a more individualistic culture. Attributing barriers to other factors rather than solely intrapsychic/interpersonal factors goes well with human nature because human organism strives to protect itself to stay away from unenjoyable and undesired situations, thoughts, feelings, and bodily sensations (Tanhan, 2019; Tanhan et al., 2020).

Lack of more similar or OPV studies and especially from different countries limit our discussion of attribution of facilitators and barriers. However, Armiyau and others (2022) found people in Nigeria attributed their mental health facilitators for COVID-19 process at most to microsystems (63%) and individual/intrapsychic (62%) factors (as we mentioned above, they can be considered together). And these people attributed the barriers at most to all together category (66%). These also can be seen from the positive psychology perspective that explains human nature's tendency to protect one's own organism. As the authors, we found quite important to see the college students in this current study acknowledge and attribute the facilitators and barriers to all together (71%, 56% respectively) category because our theoretical framework perspectives and especially EST stresses such a similar perspective: overall wellbeing and issues are multidimensional.

Limitations

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The first limitation is using OPV to collect data and OIPA to analyze the data, which may have affected the number and diversity of the participants and constructed themes considering some students did not have access to internet and or extra resources to participate. Secondly, we had 526 participants participated and only 260 of them consented while 240 of them fully completed the facilitator and 190 of them the barrier section of the study. Thirdly, the limitation of having the majority of the students from three university departments including teaching Arabic, psychology, media, and computer related majors, cannot be discarded. Another limitation is limited interdisciplinary social advocacy perspective; some volunteered students and the authors shared the results with their school administrations and peers but not yet with local or national governments and/or at a conference. We keep using the results and this paper for an interdisciplinary social advocacy.

Conclusions

We conclude that there are many facilitators and barriers for college students' online/distance education during the pandemic. These factors are affecting them from an individual level to macrosystem levels from an EST perspective. These factors are multidimensional and require a comprehensive collaboration to understand and address them. We emphasized the role of all parts (e.g., students, parents, administrators, institutions, policy makers) involved in education to be open to understand and acknowledge these factors with and for the students from their own unique and comprehensive perspectives. It is crucial to attend the students' lived experiences through shared photos, written stories, and submitted key/summary words/themes rather than just a top-down approach. We firmly believe through this OPV study, with our volunteers we contribute a significant value to the related literature by engaging students through their photos, stories, and summary words to be conveyed to others . As the researchers, volunteered students and some others who gradually prefer to get involved, we strive to act from a contextual and mindful mindset to utilize the results and this

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paper to keep interdisciplinary social advocacy rather than leaving the results on their own or in online research databases. In light of all these, we have a few implications.

Implications

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

Implications for Researchers

There are only few OPV research on online/distance education; therefore, first and foremost researchers can 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/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 effects of little known topics emerged in the main themes. Additionally, researchers can use of grounded theory, IPA, and OIPA, with future OPV research. Then they can compare the results and report the effect of these different analyzing approaches.

Implications for Educators

Educators are the gatekeepers to train the most key people (e.g., teachers, mental health providers, engineers, doctors) who have the most critical roles to construct a more well-grounded society. Therefore, we have a few critical implications for future educators. First and foremost, educators need to understand the contextual questions, facilitators, and barriers very carefully as we have discussed in details above. They, especially, need to understand acknowledge that many students experienced serious issues (e.g., lack of having

their own computer and smartphone, facing financial issues, being unsatisfied with Tanhan, A., Boyle, C., Sogut, Y., Tas, I., Cashwell, C. C., Genc, E., & Karatepe, H. T., (2023). Using Online Photovoice and community-based participatory research to understand facilitators and barriers to online distance education during COVID-19. *Distance Education*. <https://doi.org/10.1080/01587919.2022.2156320>

online/distance education). Educators can collaborate with all other key people and institutions to address these issues from a more systematical 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 understanding of the facilitators and strive to enhance them, as we know human beings grow more with positive feedback rather than just focusing on the issues. Additionally, educators can improve themselves to create some time for more effective and mindful interactions, which may improve students' learning enthusiasm and attentiveness. For example, educators can design some socioeducational games that creates some enjoyable, meaningful, and contextually sensitive activities. For example, the first author of this paper at the beginning of a few courses asked his students to check the facilitator and barriers' tables in this paper and address and share their bodily sensations, feelings, and thoughts related to the results and what they think we could do about them. The students found the activity very meaningful and interactive.

Implications for Mental Health Providers

Educators and mental health providers can provide much more contextually effective, affordable, and appropriate services if they cooperate (Tanhan, 2020). 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, bodily sensations and found technology as one of the most important facilitators for their education. However, the mental health providers and especially the ones working at state universities' mental health services in Turkey rarely use technology for mental health

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services (Tanhan, 2020; Tanhan et al., 2020). Therefore, the providers can work to provide services utilizing internet and related technology. The providers could provide affordable mental health services (e.g., group counseling, bibliotherapy, providing biopsychosocial spiritual activities that construct enjoyable feelings) to enhance students stress management strategies. Last and the most important, the providers can collaborate with key individuals and organizations who can play an important role in advocating for an improved understanding of the challenges of students during the closure of campuses.

Implications for Key Authorities and Advocacy

Government and authorities can provide financial support to improve the quality and availability of online education. For example; infrastructural facilities could be built in all educational institutions for regulation of the digital learning process during times of emergencies. Further, authorities can provide study spaces with free internet access to convenient places for those who are in lower socioeconomic status. Finally, all interested in online/distance education can collaborate for more effective services and advocacy at all levels.

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