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## Case Report

# What happens to DID clients after an earthquake: A case series

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On February 6, 2024, following two major earthquakes in Türkiye, over 35,000 buildings collapsed, and approximately 50,000 people lost their lives. In response, our university psychology department established a psychotherapy center in the affected region as a social responsibility project, providing services for seven months. During this period, 820 clients were reached, and dissociative identity disorder (DID) was identified in 16 of them (around 2%). The identification was made possible by a team experienced in DID, who incorporated it into routine differential diagnosis. The clients, aged 12 to 37, included 13 females. Analysis revealed that DID symptoms worsened for 11 clients after the earthquake, with increased issues such as anger and, in some cases, the emergence of new alternate identities. One child client experienced the first appearance of an alternate identity after the earthquake. These findings emphasize the necessity of monitoring DID patients after disasters and delivering treatments specifically tailored to their needs.

## 1. Introduction

Dissociative identity disorder (DID) is a complex mental health problem that often originates in childhood and evolves over a person's lifetime, frequently manifesting through new dissociative splits triggered by various traumas (Sar et al., 2017). These new splits may not arise solely from the original trauma; rather, they can also result from diverse traumatic experiences or unmet emotional needs (Beere, 2009; Ozturk & Sar, 2016). For instance, research shows a link between exposure to severe earthquakes and dissociation scores in children, underscoring the psychological impacts of such traumatic environmental events (Canan & North, 2019).

While extensive research has focused on dissociation in the context of abuse or neglect, considerably less literature has explored its relation to natural disasters, such as earthquakes, floods, and fires. Existing studies, however, suggest that natural traumatic events can induce dissociation similarly to human-made traumas (Ozdemir et al., 2015; Van der Kolk & Fislis, 1996). Furthermore, pre-existing psychopathology—particularly prior exposure to trauma—has been shown to heighten the risk of developing subsequent psychiatric conditions, including PTSD (Sayed et al., 2015). Despite this connection, dissociation is often viewed merely as a symptom of PTSD rather than a distinct phenomenon deserving further exploration (Canan & North, 2019). Notably, there is a significant gap in empirical studies examining whether trauma from natural disasters can trigger the emergence of new

alternate identities in individuals diagnosed with DID.

According to the trauma model dissociation of DID (Dalenberg et al., 2012; Moskowitz & van der Hart, 2020), it is essential to question the effects of dissociation- which serves as an escape from confronting traumatic memories- during a traumatic event such as an earthquake. Thus, exploring how natural disasters like earthquakes affect individuals with existing DID is critical for both enhancing theoretical understanding of DID and informing clinical service planning.

On February 6, 2023, Türkiye experienced two major earthquakes with magnitudes of 7.8 and 7.5, centered in Pazarcık and Elbistan districts of Kahramanmaraş and occurring just nine hours apart. These earthquakes impacted an unprecedentedly large area, including 11 provinces, and earned the designation “Disaster of the Century” (Presidency of the Republic of Türkiye Directorate of Communications, 2023). The population in cities directly affected corresponds to 16.4 % of Türkiye's overall population. Over 35,000 buildings collapsed, resulting in more than 48,000 fatalities (Strategy & Budget Office, 2023).

The aim of this study is to investigate the effects of the February 6, 2023, earthquakes on individuals diagnosed with DID.

In this context, the following research questions will be addressed:

- Did the symptoms of DID patients change following the earthquake?
- Did the earthquake affect the existing alternate identities?
- Did new alternate identities emerge as a result of the earthquake?

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- If new alternate identities did form, did this occur at the time of the earthquake or subsequently?

## 2. Method

### 2.1. Process

This study was conducted at the University Psychotherapy Application and Research Center in the earthquake region, which was established two months after the earthquake that severely impacted the region. The center aimed to provide psychotherapy services in the aftermath of the disaster. For a period of seven months, face-to-face psychotherapy services were delivered by supervised doctoral students in clinical psychology. Following this initial phase, the services transitioned to online formats for clients who preferred this option. Ethical approval for the study was obtained from the University Ethics Committee, and written consent forms were collected from the clients or from their parents under the age of 18.

### 2.2. Diagnosis process

As part of the clinic’s standard procedure, all psychotherapists conducted a thorough clinical differential diagnosis for every client during the first or second session. This process involved assessing conditions such as PTSD, grief disorders, anxiety disorders, obsessive-compulsive spectrum disorders, mood disorders, eating disorders, psychotic disorders, and dissociative disorders. If the initial complaints suggested a

diagnosis outside these groups, DSM-5 diagnostic criteria relevant to the suspected condition were applied. The study team followed DID diagnostic procedures (Yanik, 2023) for individuals whom the clinician believes may have dissociative identity disorder (DID), as outlined in Fig. 1, as part of routine differential diagnosis.

### 2.3. DID therapy process

All psychotherapists at the clinic received training and supervision from MY, a co-author of this article, who has approximately 30 years of experience in treating dissociative identity disorder (DID) and has trained more than 200 mental health professionals in Türkiye. Each therapist held at least a master’s degree in clinical psychology, had a minimum of three years of therapy experience, and had prior experience in diagnosing and treating DID before the earthquake.

Therapies for DID were conducted following a treatment protocol developed by MY, based on the 3-phase model of the International Society for the Study of Trauma and Dissociation (ISSTD, 2011). This approach includes phases focusing on stabilization, trauma processing, and integration/rehabilitation, providing a comprehensive framework for DID treatment.

#### 2.3.1. Selected key terms in DID therapy

**Host:** The primary identity that is most often in control of the body and typically attends therapy. The host may or may not be aware of the existence of other identities (alternate identities).

**Alternate Identities:** A distinct personality state within an individual

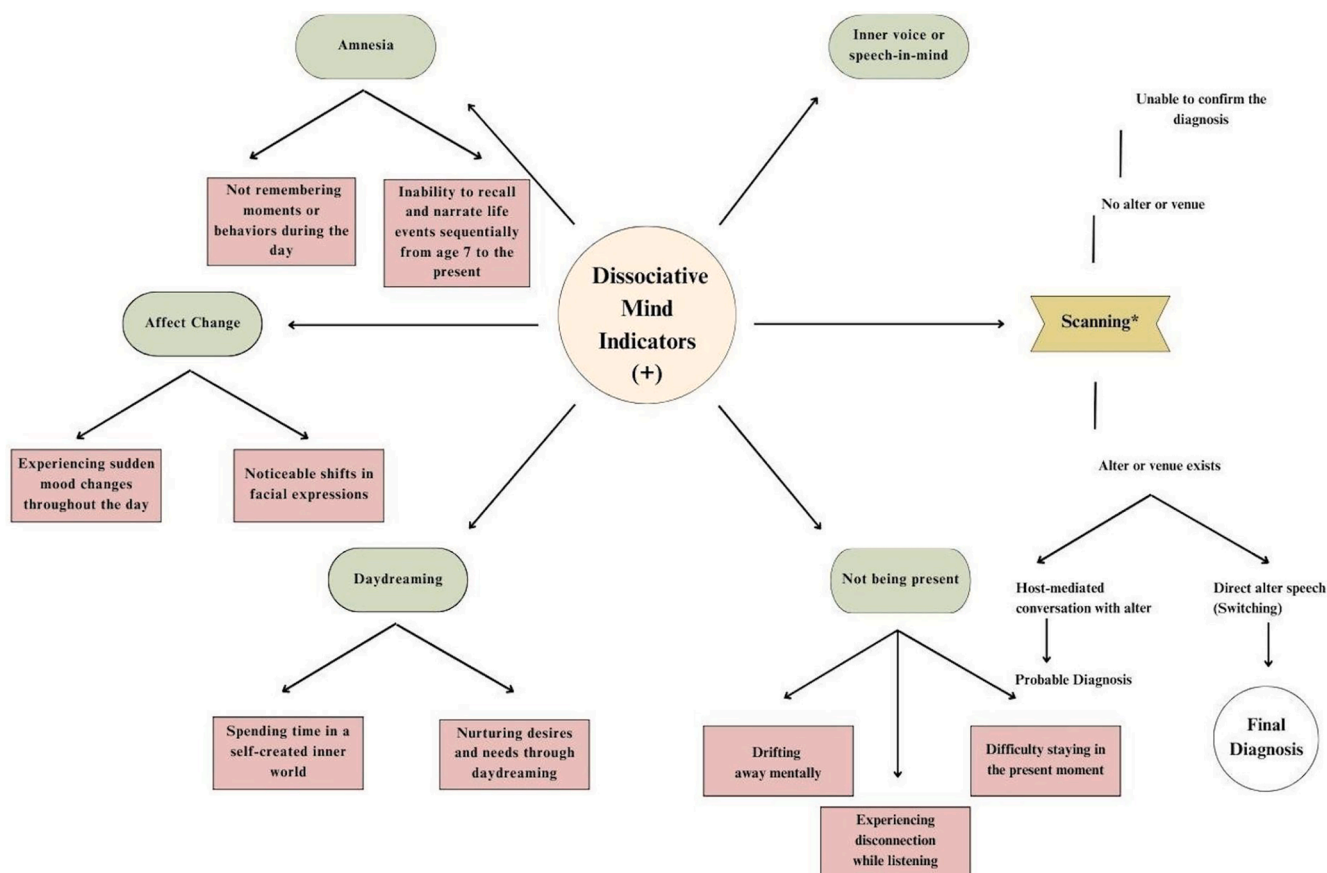


Fig. 1. Criteria Considered in the DID Diagnosis.

Scanning is a key technique for accessing the alter system, exploring a person’s inner world by calling, observing, and sensing. In DID, dissociated consciousnesses may communicate through alters, revealing organized mental places or conveying intense emotions.

with DID. Alternate identities can differ in various ways, including age, gender, temperament, abilities, and worldview. They often emerge to manage specific emotions, memories, or life roles. Alternate identities typically develop to serve protective or regulatory functions within the dissociative system.

**Copy Alternate Identity:** A copy alternate identity is one that duplicates or emulates a significant external figure and behaves within the internal world as if it were in the role of the person being copied.

### 2.3.2. Key techniques and insights in DID therapy and the current study's framework

In addition to the standard three-phase model (stabilization, trauma processing, integration), structured techniques were applied across cases to promote grounding, internal cooperation, and orientation to physical reality. These techniques were informed by clinical practices outlined in Yanik's Book (2023), which emphasized experiential, body-oriented, and symbolic interventions for working with alternate identities.

Building upon these structured techniques, psychoeducation on DID and dissociation was also integrated into the therapeutic process to further support clients and alternate identities in understanding their condition. Psychoeducation on DID and dissociation involved providing clients and alternate identities with information about dissociation, memory fragmentation, and identity splitting, which helped normalize their experiences and increase self-understanding.

**Reality Orientation Techniques:** To help alternate identities differentiate between their internal perceptions and the physical world, techniques such as the pen technique and selfie/mirror exercises were utilized. For example, if an alternate identity believes that she/he is a different person with a different gender or age, the therapist might ask her/him to move a pen and observe her/his reflection in order to notice the contrast between her/his internal world image and her/his current physical form. To illustrate, a therapist might ask a female client, who has an alternate identity identifying as male in her internal world, 'Can you move the pen with a man's hand?'

**Safe Place Imagery:** A safe place can be visualized for alternate identities experiencing overwhelming emotions or hypervigilance. This safe place is visualized according to the specific needs of the alternate identity, and its imagery helps facilitate grounding and a sense of safety during moments of internal distress.

**Skill and Trait Transfer ("Copy-Paste" Technique):** Positive attributes or coping mechanisms identified in one identity were symbolically or vocally "transferred" to other identities to enhance adaptive functioning. This strategy fostered reciprocal support across diverse identities and proved especially beneficial when one identity had superior communication or problem-solving abilities.

**Internal Dialogue and System Meetings:** Certain sessions featured symbolic "roundtable" discussions among alternate identities, which facilitated internal cooperation, role clarification, and shared decision-making.

## 2.4. Participants

Sixteen clients diagnosed with dissociative identity disorder (DID) were included in this study from among the 820 clients who applied to the psychotherapy center in the earthquake-affected province between April 17, 2023, and October 15, 2023. The characteristics of these 16 clients are shown in Table 1. Due to space limitations, only three cases, selected for their characteristic and representative features of DID, are presented in detail.

## 2.5. Scales

### 2.5.1. Dissociative experiences scale (DES)

Developed by Bernstein and Putnam in 1986, this 28-item self-report scale measures dissociative symptoms. Participants rate the frequency of

daily dissociative experiences from 0 to 100 (excluding substance influence). A mean score above 30 suggests a potential dissociative disorder. In the general population, DES scores typically range from 5 to 15 ( $M = 7.8, SD = 6.6$ ), while individuals with DID commonly score much higher, with reported means between 45 and 55 (Bernstein & Putnam, 1986; Carlson & Putnam, 1993). The DES has demonstrated high reliability and internal consistency (Cronbach's  $\alpha = 0.93$ ). The Turkish adaptation by Yargic et al. (1995) reported similarly strong psychometric properties (Cronbach's  $\alpha = 0.91$ ).

### 2.5.2. Adolescent dissociative experiences scale (A-DES)

Armstrong et al.'s, 1997 30-item self-report A-DES assesses 11–17 year olds for dissociative behaviors. Dissociative amnesia, absorption/imaginative involvement, passive influence, and depersonalization/derealization are assessed from 0 (never) to 10 (always). A-DES scores in non-clinical adolescent samples generally average approximately 2.3 ( $SD = 1.6$ ), whereas adolescents diagnosed with DID have reported means exceeding 7.0 (Armstrong et al., 1997). The scale demonstrates high internal consistency (Cronbach's  $\alpha = 0.96$ ) and robust test-retest reliability. The validation study conducted in Türkiye (Zoroglu et al., 2002) demonstrated robust psychometric properties, with a Cronbach's  $\alpha$  of 0.94.

### 2.5.3. Adverse childhood experiences questionnaire (ACEQ)

The ACEQ, from the 1997 Kaiser Permanente ACE study, is a 10-item self-report instrument assessing exposure to emotional, physical, and sexual abuse, neglect, and family dysfunction (e.g., divorce) before age 18. Each item is scored as yes/no, with a total score range of 0–10. The ACEQ has strong internal consistency (Cronbach's  $\alpha = 0.76$ ) and predicts future mental health outcomes. The Turkish adaptation by Gündüz et al. (2018) validated the scale's reliability (Cronbach's  $\alpha = 0.79$ ).

## 3. Case presentation

### 3.1. Sema (Case 3)

#### 3.1.1. Demographic information and earthquake experience

Sema<sup>1</sup> is a 14-year-old female client. She is a high school student. The client was at home when the earthquake struck and fortunately, her family was unharmed. Their house also remains in good condition.

#### 3.1.2. Applications complaints

Her mother reported the client's anger issues, including yelling over minor matters and physical aggression toward her. At therapy's start the client disclosed self-harm, intrusive thoughts, and intense anger, adding that she had wanted to see a psychologist for 5–6 years, though her family was opposed.

#### 3.1.3. Diagnostic process

The client was diagnosed with major depressive disorder per DSM-5 criteria, showing symptoms of anhedonia, depressive mood, anger, focus issues, and feelings of worthlessness. Intense anxiety, fear of judgment, and functional impairment suggested performance anxiety. Persistent internal dialogue, mood swings, intense anger, and self-harm raised a differential consideration for DID. The client scored 8 on the ACE Scale and 4.8 on the A-DES Scale. During sessions, the "28-Year-Old" alternate identity temporarily took control.

#### 3.1.4. Alternate identity information

**28-Year-Old:** This alternate identity emerged during the client's first dissociative split and has supported her since, describing the role as "watching from a window" and helping "from a distance." The client

<sup>1</sup> The name and some specific information of all cases have been changed to anonymize identifying details.

**Table 1**  
Sample Characteristics.

	Cases															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>Gender</b>	W	W	W	W	M	W	W	W	W	W	M	W	W	W	W	M
<b>Age</b>	15	25	14	35	12	14	13	14	14	18	11	36	16	32	18	12
<b>Marital status</b>	S	S	S	M	S	S	S	S	S	S	S	M	S	S	S	S
<b>Educational Level</b>	HS	U	HS	U	PS	HS	PS	HS	HS	HS	PS	PS	HS	HS	HS	PS
<b>Pre-Earthquake Trauma Experiences</b>	EN	SA, PA, EA	PA, EN, EA	PA, EA	EN	EN	EA	EN, EA	SA	SA, EN	EN	EN	SA, EN	SA, EN	PA, EN	EN

Notes.

Gender: "W" for woman, "M" for man.

Marital status: "S" for single, "M" for married.

Educational Level: "HS" for high school, "U" for university, "PS" for primary school.

Pre-Earthquake Trauma Experiences: "EN" for Emotional Neglect, "EA" for Emotional Abuse, "PA" for Physical Abuse, "SA" for Sexual Abuse.

often resisted this support, feeling dominated by another identity, Eylül. In the sixth session, 28-Year-Old took control, indicating the client would draw an eye to represent it and share her troubles. During the earthquake, this identity reassured her, saying, "Calm down, you will live," but has been absent since then.

**Eylül:** This alternate identity persistently disparages the host, triggering self-harm over minor mistakes. Though Eylül's emergence timing is unclear, the client avoids engaging with her in sessions due to her negative impact. Their last encounter, three weeks post-earthquake, during a crisis, led the client to self-harm.

**Nameless:** Little is known about this alternate identity, including its name and emergence. Similar to Eylül, Nameless sometimes disparages the client, though less intensely, and occasionally shows kindness. There has been no direct contact with this alternate identity.

3.1.5. Summary of the therapy process

A total of 7 sessions were held with Sema. After gathering her history in the first five sessions, the focus shifted to alternate identities in sessions 6 and 7. Three alternate identities were identified, with contact and a switch observed only with "28-Year-Old". During the switch, the client closed her eyes, allowing "28-Year-Old" control; upon returning, she reported nausea and headache. In the following session, she shared that the switch helped her discover new interests, like painting. She was referred to in-person therapy, as university-affiliated services in the earthquake zone shifted online, which she declined.

3.2. Ali (Case 16)

3.2.1. Demographic information and earthquake experience

Ali is a 12-year-old male who was at his grandmother's durable house during the earthquake and experienced no losses.

3.2.2. Application complaints

Ali attends therapy with his grandmother, who sought help due to his excessive tablet use and aggression when interrupted.

3.2.3. Diagnostic process

In the DSM-5 differential diagnosis, it was notable that the client began hearing voices post-earthquake, experienced sudden emotional shifts, and felt dual emotions simultaneously. There was also reduced enjoyment in activities, with marked hopelessness and anger, leading to considerations of major depressive disorder and DID. The client scored two on the ACE and 5.4 on the A-DES scales.

3.2.4. Alternate identity information

**Himself (Inner Voice):** An alternate identity sharing the client's name emerged four days after the earthquake, triggered by overwhelming news of widespread death. This identity aims to aid decision-making and evoke a sense of "inadequacy," pushing the client to return to their former self.

**Elizabeth:** An alternate identity inspired by an anime character known as a 'representative of goodness,' whom the client described as a source of happiness. Elizabeth, perceived as a "feeling," emerged after the earthquake, inspired by an anime character embodying kindness and positivity.

3.2.5. Summary of therapy process

Four sessions were held with the client, during which he integrated with the alternate identity "Inner Voice." However, he did not wish to integrate with the identity Elizabeth. There was no body control during the sessions. Post-integration, he reported no longer hearing the Inner Voice that previously made him feel inadequate.

3.3. Eda (Case 15)

3.3.1. Demographic information and earthquake experience

Eda is an 18-year-old female client whose first-degree relatives survived the earthquake. Her family continues to live in their slightly damaged home.

3.3.2. Application complaints

She presented 4 months post-earthquake, reporting destructive anger outbursts affecting her relationships and difficulty with focus and concentration.

3.3.3. Diagnostic process

The differential diagnosis revealed anxiety and dissociative symptoms. The client met criteria for Generalized Anxiety Disorder and Social Phobia, with dissociative symptoms like rapid mood swings, daydreaming, forgetfulness, and childhood amnesia. She scored 1 on the ACE and 27.14 on the DES.

3.3.4. Alternate identity information

**Lodos (Angry Alter):** In the 2nd session, Lodos was discovered hiding in the host's mind, observing events from a distance. He appears as a 3-year-old boy with black hair, white skin, and brown eyes, wearing a black t-shirt and shorts, carrying intense, protective anger. Present in the host's mind for 2 years, Lodos emerged after her father's death and relatives' insincerity, aiming to clarify her boundaries and intentions. Distrusting the host's coping ability, he intervenes whenever she feels overwhelmed to prevent her from crying. In the 3rd session, a mental "safe place" (a forest house) was created, and tools like a sandbag, bop bag, and boxing gloves allowed Lodos to release anger physically. By the 4th session, he reported feeling calmer as physical exertion reduced his anger. Lodos's positive traits were highlighted to the host, leading to an agreement for him to trust her more and reduce his interventions. By the 6th session, Lodos observed Aylin (Self-Confident Girl) taking on more roles, reducing the importance of his role. A roundtable with the alternate identities improved interactions, and a decrease in the client's anger outbursts was noted. Psychoeducation on DID, mind-splitting, and

grounding techniques (like the selfie and pen exercises) helped Lodos distinguish the mental world from reality, improving his orientation to time and space.

**Bulut (Happy Child):** This 4-year-old alternate identity, first encountered in the 2nd session, sits in a park with his parents, longing for affection, especially from his father. Bulut expressed sadness over his father's absence and tries to comfort the host by doing "cute things" to fill the emotional gap. When discovered, the client switched to Bulut's childlike mannerisms, even crying. Bulut, who was formed<sup>2</sup> 4–5 years ago after the host's father temporarily left due to parental conflict, reported feeling "tired". He was taken to a mental safe place to rest and, by the 6th session, felt more restored. A roundtable with alternate identities improved interactions, and Bulut received psychoeducation on DID, with grounding techniques like the "selfie" and "pen" exercises to help him distinguish the mental world from reality and improve orientation.

**Ayla (Grumpy Youth):** Reached in the 3rd session, Ayla explained that she often felt replaced by the angry identity, Lodos, due to feeling misunderstood and worn out. Formed when the host was 3, after her brother's birth, Ayla expressed a desire for invisibility, leading to social isolation for the host. To support her, a mental safe chalet was created with activities she enjoys (painting, reading, coffee). A roundtable improved interaction among identities, and DID psychoeducation helped orient Ayla to time and space.

**Yağmur (Sad Youth):** Reached in the 5th session, a 14-year-old alternate identity, was found sitting on a bench by the sea, displaying depressive symptoms. The CBT depression reluctance cycle was introduced, and a walking plan was created with her. A roundtable with other alternate identities was held to improve interaction, and Yağmur received DID psychoeducation, learning the rationale for mind-splitting and distinguishing the mental world from reality. She noted that the Self-Confident Girl emerged after her activation.

**Aylin (Self-Confident Girl):** Reached in the 6th session, a 25-year-old alternate identity with black hair, brown eyes, often dressed in black and wearing sunglasses. Admired by others, including Lodos, she steps in when his approach becomes too confrontational. Aylin emerged three years ago after the host's father didn't accompany her to school on her first day of 10th grade. She supports the host's sociability and sometimes fully controls her body. In her mind, Aylin sees herself as a police special operative, engaging in thrill-seeking activities like risky motorcycle riding. Switching was observed during her sessions. A roundtable was held to increase cooperation, and Aylin received DID psychoeducation on mind-splitting and grounding, agreeing to avoid risky behaviors and relinquish body control when unnecessary.

**Yeliz (Stubborn Girl):** Reached in the 7th session, a 24-year-old alternate identity focused on fulfilling the host's desires. She often spends time with Aylin (Self-Confident Girl) and feels less needed with Lodos (Angry Boy) present. Due to past risky behaviors, she agreed to avoid such actions. Yeliz's role was redefined to offer guidance on stubbornness without controlling the host's body, allowing the host to manage stubborn tendencies. A roundtable improved interactions among identities, and Yeliz received DID psychoeducation on mind-splitting, spatial orientation, and body autonomy.

**Savaş (Biker Boy):** Reached in the 7th session, a 25-year-old male alternate identity who is quiet, reserved, and distant from others, noting his influence on the host's stagnant mode.

**Eylül (The Girl in the Attic):** In the 8th session, a 19–20-year-old alternate identity residing in the attic with other identities was reached. Formed three years ago during the host's 3rd year of high school, she explained, "I came into existence when Eda didn't study after her father enrolled her in a private school. My purpose is to study; I feel both anger and sadness for her." Her influence prompts intense but short-lived urges

to study. A reconciliation was reached for Eylül to support the host without judgment, and a study plan using the Pomodoro technique was created. Eylül received DID psychoeducation on mind-splitting, spatial orientation, and one-body awareness.

**Duman (The Cat):** Reached in the 2nd session, this 5-year-old, smoke-black female cat alternate identities explained she's been in the host's mind for 3–4 years, aiming to redirect Eda's love away from "empty" people toward the cat. Duman also fulfills the client's need for physical affection. The alternate identity received DID psychoeducation, including the rationale for mind-splitting, spatial orientation, and the concept of one-body awareness.

**Copy Alternate Identities:** The first alternate identity discovered in the 2nd session is a copy of the client's mother, who has been present for 19 years with the purpose of guiding and occasionally intervening in Eda's life. In the same session, copies of the client's younger and middle brothers were also encountered and were sent out of the mind in the 5th session after explaining the rationale for copy alternate identities. In the 7th session, a copy of a book character, who is the partner of Stubborn Girl Yeliz's motorcycle gallery, was identified, along with a copy of the therapist. The therapist copy, present since therapy began, was also removed in the same session by explaining the purpose of copy alternate identity.

### 3.3.5. Summary of the therapy process

Across 9 sessions, 14 alternate identities were reached, including 5 copies. After the earthquake, mood swings intensified, activating anger.

## 4. Findings

About 94 % ( $N = 15$ ) of cases had alternate identity activity before the earthquake. In all cases, alternate identity activity and DID symptoms intensified. In 25 % ( $N = 4$ ), new identities or copy identities emerged due to the earthquake. One case reported no alternate identity activity before the earthquake.

Table 2 shows that 11 of 16 clients (69 %) had alternate identities activated or altered due to the earthquake. In Case 1, the alternate identity "Frightened" stopped the client from crying under the rubble, clearing stones to make space. This alternate identity, who experienced the rubble firsthand, was later contacted for intervention.

In Case 13, the client, with a history of childhood abuse and multiple alternate identities holding abuse memories, showed an increase in alternate identities post-earthquake. Approximately 69 % ( $N = 11$ ) of clients dropped out before completing therapy, primarily due to the university clinic team leaving the earthquake zone after a seven-month project. Many clients declined to continue with online sessions and were subsequently referred.

Alternate identities reacted to the earthquake with heightened anger in angry identities and rapid mood shifts. Some identities, however, emerged to support the client; for example, in Case 3, an alternate identity appeared during the earthquake, encouraging the client with, "Calm down, you will survive."

At the study's outset, our first question was whether DID symptoms changed after the earthquake. Post-earthquake, we observed symptom changes in DID patients, including rapid mood shifts, intense reactions to stimuli, and increased internal noise.

Our second question examined whether existing alternate identities were impacted. Observations showed that pre-existing identities became more prominent, causing sudden mood swings, concentration difficulties, anger outbursts, self-harm, and reduced functionality. For example, in Case 1, the patient experienced heightened reactivity to minor stimuli, causing frequent shifts between identities. In Case 4, a protector identity became more dominant, intensifying reactions to environmental triggers and impairing daily functioning. Case 8 exhibited increased irritability and aggression, Case 10 saw hypersensitivity to loud sounds and light leading to dissociative episodes, and Case 16 involved heightened fear and hypervigilance impacting social

<sup>2</sup> In the treatment approach used, therapists inquire about when alternate identities formed and their connection to specific events. If known, this information is shared.

**Table 2**  
Changes in DID Symptoms and Identity Formation Following Earthquake Trauma.

	Cases															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Change in symptoms	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No
Change in existing alternate identities	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes	Yes	No
Formation of new alternate identities	Yes	No	No	Yes	No	No	No	Yes	No	Yes	No	No	No	No	No	Yes
Time for formation of new alternate identities	DE*	No	No	PE**	No	No	No	PE**	No	PE**	No	No	No	No	No	PE**

Notes.

\*DE: During Earthquake.

\*\*PE: Post Earthquake.

interactions.

Our third question focused on the formation of new alternate identities due to the earthquake. New identities did emerge in some cases, specifically in Cases 1, 4, 8, 10, and 16. For example, in Case 4, a new identity reported constant anxiety and a need to keep moving, while in Case 10, a new identity formed to protect the client, stating, “I emerged so that [the client] would not feel bad.”

Finally, we investigated the timing of these new identities’ formation. Only in Case 1 did a new identity emerge during the earthquake, formed in the rubble. In Case 1, the first identity contacted was a male copy identity. He calls the client from the far reaches of the mind, requesting “assistance and cooperation”. The client identified this copy identity as a search and rescue worker who assisted in the incident. The client and therapist visited the moment of her entrapment in the rubble; she was extracted with the help of the rescue team, followed by subsequent transport to the safe zone, the hospital. Concurrently, the copy identity ceased to exist. In all other cases, new identities appeared post-earthquake, once clients had reached safer environments. Notably, Case 16 had their first-ever dissociative episode 1–2 weeks after the earthquake, marking a delayed response to the trauma. The therapist reported that Case 16 has two identities, both formed post-earthquake, within 1–2 weeks. No pre-earthquake identities were identified, and the existing identities confirmed their post-earthquake formation.

**5. Discussion**

This study involved clients who sought treatment at a psychotherapy center established in a province in an earthquake region two months after the Kahramanmaraş earthquake on February 6. As the first psychotherapy center in the earthquake zone, it conducted weekly sessions with child, adolescent, and adult clients for seven months. The study aimed to assess post-earthquake conditions in clients with a history of DID and to observe potential DID development in child clients.

Results showed that all clients with pre-existing DID experienced increased symptoms, including heightened alternate identity activity, with some displaying alternate identity behaviors during the earthquake. New alternate identities formed in some clients post-earthquake, notably including a 12-year-old who developed an alternate identity 1–2 weeks after the event, despite no prior DID symptoms. These results also demonstrated that approximately one-third of the cases were affected by the earthquake in terms of the formation of new alternate identities. Most of these identities emerged after the earthquake, with the exception of Case 1, where a new alternate identity formed during the earthquake. This case was also the only one involving extreme intra-earthquake trauma.

These findings underscore the importance of mental health professionals monitoring DID clients for new identity formation and symptom exacerbation following natural disasters. Additionally, the study highlights that earthquakes not only intensify dissociation but also emphasize the need to screen for DID in adults with childhood trauma and in children 12 years or younger, and to establish appropriate intervention frameworks.

The February 6 earthquake caused extensive material and emotional

damage across a vast area, creating a challenging environment for therapy. Given the severity and impact of the disaster, our priority as therapists was to offer support to those in need, rather than conducting a systematically planned academic study. This service-oriented focus led to some limitations, including incomplete scale scores. Factors such as clients’ reluctance to complete assessments, logistical constraints, staff strain, and the involvement of non-specialized personnel further contributed to the limitation of incomplete scores. Additionally, challenges in maintaining face-to-face sessions—particularly crucial for clients with DID—arose, as the clinic in the earthquake region was only able to operate for a limited period. Many clients were unable to continue therapy due to unstable conditions in the earthquake zone.

The psychotherapy center was established in an area with limited pre-existing mental health services, which may have contributed to the frequency of DID diagnoses. Of 820 clients seen over seven months, 16 (about 2 %) were diagnosed with DID. This rate aligns with the outpatient prevalence, which ranges from 2 % to 6 % (Foote et al., 2006; Sar et al., 2003,; 2000), and exceeds general population estimates, which range from 0.4 % to 1.5 % (Akyüz et al., 1999; Johnson et al., 2006; Sar et al., 2007), potentially due to routine screening for DID by trained therapists at the center.

Following the earthquake, nearly all DID clients exhibited increased alternate identity activity, often characterized by intense and sudden anger, rapid emotional shifts, crying, focus issues, night terrors, poor sleep quality, and heightened anxiety. These findings suggest an exacerbation of DID symptoms in response to trauma, underscoring the need for specialized interventions in post-disaster contexts.

In Ayla’s case, an alternate identity remained mentally trapped under the cave-in; orienting this identity away from the cave-in provided clinical relief. Only one DID client appears to have developed DID due to the earthquake’s traumatic impact, while in the other 15 cases, DID existed pre-earthquake, but symptoms and alternate identities were affected by it. This could be due to the study period occurring 2–9 months post-earthquake; even if dissociation sufficient for identity formation occurred, alternate identity activity might not yet be evident, leading to early unrecognition. Additionally, new identity formation may be harder after age 11–12. Although a split was suspected to have occurred during the earthquake in one case, this couldn’t be confirmed due to limited therapy progress. The hypothesis that earthquakes might trigger DID onset warrants further investigation in future studies.

This study suggests that a traumatic event like an earthquake can intensify dissociative experiences in DID cases. This process may lead to the formation of new alternate identities, new roles for existing identities, and an overall increase in dissociation. Dissociation can serve as a short-term coping mechanism during the earthquake, but it may contribute to long-term psychopathology.

The study also highlights the importance of incorporating DID in routine differential diagnosis in post-disaster psychotherapy services, as DID is frequently misdiagnosed, leading to ineffective treatments and added burdens on both individuals and the mental health system (Horn, 2003; Salvador-Carulla et al., 1995). By using routine DID screening, our team identified and appropriately treated DID clients through targeted interventions based on the International Society for the Study of Trauma

and Dissociation (ISSTD, 2011).

This study highlights that, even in the chaotic post-disaster environment, clients with DID can be identified and treated as long as conditions permit. This finding underscores the importance for public mental health of considering that DID symptoms, like other psychopathologies, may worsen after disasters. Research shows a positive link between disaster exposure and increased dissociation (Ahmadi et al., 2024; Ozdemir et al., 2015), with heightened dissociation scores observed in children exposed to earthquakes (Canan & North, 2019). Studies also link earthquake trauma with PTSD symptoms, dissociation, or peritraumatic dissociation (Hooper et al., 2014; Nobakht et al., 2019; Ozdemir et al., 2015). However, despite extensive research on disaster-related dissociation, studies specifically focused on DID remain absent. Dissociative disorders are typically treated at the symptom level with techniques such as grounding exercises and staying in the moment, but these interventions tend to be superficial and less effective for DID, which requires specialized treatment approaches.

While this study offers valuable insights and paves the way for future research, it has some limitations. First, routine differential diagnosis was not conducted through structured interviews (e.g., SCID-I). Second, the limited operational period of our therapy center meant that some clients could not complete the therapy process, leaving unresolved whether additional alternate identities were present. Despite these limitations, this study makes a crucial contribution by highlighting the importance of correctly identifying and treating DID—often underdiagnosed or misdiagnosed (Atılan Fedai & Asoğlu, 2022; Moskowitz et al., 2009)—in a challenging post-disaster setting.

## 6. Conclusion

Natural disasters not only cause financial and physical harm but also lead to significant psychological effects, particularly for people who already have mental health issues. This study highlights the substantial impact of natural catastrophes, such as earthquakes, on people with dissociative identity disorder (DID) in a region with limited mental health resources. The findings suggest that the trauma from such events can worsen existing DID symptoms and, in some cases, lead to the formation of new alternate identities. Even though there was only one new case of DID found, the fact that people with pre-existing DID showed more alternate identity activity highlights how natural catastrophes can exacerbate dissociative disorders. In order to prevent misdiagnosis and guarantee effective treatment, it is evident that focused post-disaster interventions and routine DID screening are necessary. Despite its limitations, this study provides valuable insights into the intricate dynamics between natural disasters and DID.

## Ethical standards and informed consent

The study was approved by the Ethics Committee of Ibn Haldun University (Decision Number: 2024/04-07). All participants signed the informed consent in this study.

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None.

## CRediT authorship contribution statement

**B. Uysal:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Conceptualization. **M. S. Tepedelen:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Z.Z. Kablama-Yardımcı:** Writing – review & editing, Investigation, Data curation. **E. Akyüz:** Writing – review & editing, Investigation. **F.B. Bircan:** Writing – review & editing, Investigation. **M.F. Cinisli:** Writing – review & editing, Investigation. **M. Yanık:** Writing – review & editing, Supervision, Conceptualization.

## Declaration of competing interest

To the Editorial Board of the European Journal of Trauma and Dissociation,

The authors of the manuscript titled "What Happens to DID Clients After an Earthquake: A Case Series" declare no competing interests.

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