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The role of the lived body during the integration of the traumatic experience of the sternotomy scar: A case study

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Abstract

Background: Open heart surgery is a potentially traumatic experience for patients, thus posing a real risk to both the patient's physical and mental health as well as bodily integrity. All of these can greatly affect the emotional relationship to the sternotomy scar, the physical aspect of self-representation. Sternotomy scars mark patients for life, yet our knowledge of patients' subjective experiences is unknown.

Method: In our case study, we explore the embodied experiences of a woman (42) who underwent open heart surgery with the method of interpretative phenomenological analysis combined with drawings.

Results: The body and the bodily experiences play a prominent role in the formation, healing process, and symbolism of a scar. The central core of the traumatic experience of open heart surgery is the attack against the patient's sensation of bodily integrity. The interviewee experiences the surgery as abuse committed on her body, a memory that is deeply etched both in the physical memory and in the form of a scar on the skin.

Conclusion: Based on our study, it seems that the corporeal dimension of posttraumatic growth may develop after the traumatic experience of heart surgery, in which bodily intimacy with oneself and Significant Others plays a major role. In this case study, the objective reality of the heart as "sick" flesh and the "broken, pierced" bone (Körper), as well as the dissociation—and then its integration—of the lived, living body experience (Leib) are outlined. Our case study was analysed in the theoretical framework of phenomenology and psychoanalysis.

KEYWORDS

case study, embodiment, interpretative phenomenological analysis, sternotomy, trauma

1 | THEORETICAL BACKGROUND

1.1 | "Phenomenological corporeality" and illness experience

The embodiment perspective has its roots in, among other things, the phenomenological tradition which, to resolve the body–mind dichotomy that dominated 20th-century thinking, focused its investigation on the discovery of the body as experienced through sensation.[1,2] The work of the French philosopher Merleau-Ponty is fundamental to phenomenological interpretations of the lived body. The physical manifestations of phenomena—such as bodily illness—are difficult to express through language, hence the need for, according to Merleau-Ponty, a "phenomenological corporeality" of living practical knowledge.[3] He believes that the world around us can be given meaning through our bodily experiences. The body and the world around it are in constant interaction with each other: "My body and the flesh of the world mutually bend and cross into each other".[2(p.178)] Many phenomenologists on illness and health also argue that the living bodily experiences of patients should be taken into account[4–8] (Leder, 1990). The conscious experience of the body usually occurs in the case of some illness or functional disorder, in the absence of which certain bodily functions—such as breathing or heartbeat—are ignored.[9] Therefore, the body can be truly perceived in the state of illness, in which case it "seems to become a separate entity, independent of the self, thus offering itself for intervention".[9,p.142] Husserl wrote about the complexity and dual nature of the bodily experience, and his related studies argue that the body is both a physical, material body (Körper) and an experienced, living body (Leib).[10] This duality, however, is not sharply divided, but remains two aspects of the same experience: that is, the human body exists and functions in this dynamic duality, in the context of the Leibkörper (Husserl[11] cited in Müller[12]). The natural lived bodily existence has an experience similar to health, whereas in the experience of being ill, alienation occurs,[13] and the body presents itself as a kind of hindrance. In case of fear, drowning, or serious illness we become vulnerable and fallible, physical existence becomes uncontrollable while limiting our freedom.[13] This can be particularly prevalent in the case of heart-related diseases, as the abnormally functioning heart tends to beat irregularly and intensely, and experiencing bodily sensations unwittingly foregrounds the bodily experience. The experience of illness, according to Svenaeus,[14] is above all an experience of alienation from the world—the world of the healthy. The experience of illness brings the body, especially its vulnerability and limitations, to the forefront of narrowed consciousness. A sick person simultaneously experiences the experience of alienation, distance, and being chained to her body. She feels that she is handcuffed to an object that has become hostile to her life, her own body.[15]

1.2 | Body image and intersubjectivity

A change in appearance—often radical—can dramatically affect self-perception and self-esteem. Changes in appearance—especially for women—influence the way we think about the body, as well as body image itself.[16] Body image in the present context is understood as a sense of embodiment—of being with and in the body, a particular, localized experience of being oneself. The very first ideas about the development of body image come from representatives of psychoanalysis. Freud already described that the self is primarily and inherently a physical self: that is, the body, especially the surface of the body, is the source of the perceptions from which the ego originates.[17] Later authors[3,18,19] returned to this tradition and supplemented Freud's theory with the early experience of intersubjectivity. Psychoanalytic theories emphasizing intersubjectivity highlight the birth of the body in interpersonal relationships. Schilder's[19] approach confirms the fundamentally intersubjective nature of body image, according to which the formation of our body image is not possible without a social environment. With his body image concept formulated in 1935, Schilder lays the foundations of psychoanalytically oriented body image research and also his comprehensive theory: he describes body image as a process of constructions and transformations, where self-perception and perception of the outside world through the body interact with each other. In this process, differentiation and integration jointly determine the evolution of body image.[20] Based on Schilder's theory, Merleau-Ponty was the first to write about the concept of the body born in intersubjectivity, and his philosophy is one of the most significant starting points among psychoanalytic theories dealing with the body (Merleau-Ponty[3] cited in Fehér[21]). Françoise Dolto[22] drew attention to the fact that body image also has an unconscious dimension. In her theory, body image is a mapping of our emotional experiences, where the integration of bodily experiences manifests itself in the process of personality development, during which the solidified identity as a physical self is constituted. The surface structure of bodily experiences is reflected in the totality of lived experiences, in which the bodily self is formed within the framework of an intersubjective construction and integration process.

1.3 | Scars and trauma

The cardiovascular disease underlying the scar of a median sternotomy is the most common cause of death, especially ischaemic heart diseases, the mortality rate of which is the highest worldwide.[23] More than 2 million people undergo open heart surgery with median sternotomy every year,[24] one-third of them being women.[25] Median sternotomy is the longitudinal cut or bisection of the sternum at the midline. This procedure provides the most commonly used surgical approach to the heart. The sternotomy scar is a painful reminder of the traumatic experience of open heart surgery and the long recovery process following surgery. It is large in size and may remain painful and tender for a long time after surgery.[25] The physical experience of the body has a privileged role in creating the symbolism of the scar and influencing the healing process. Various causes can lead to the formation of scars: burns, accidents, diseases, and surgeries. What they all have in common is that they are injuries that leave marks on the body, marks that may fade over time but never disappear.[26] A heart operation is not only a physical but also a particularly big mental

shock for patients[27–30] Heart surgery becomes a life-and-death issue in the patient's perception, as the heart becomes associated with the question of being–nonbeing, the source of emotions and sensations, the "engine" that powers the body,[27,31] thus evoking profound existential questions. Open heart surgery is, therefore, a potentially traumatic experience for patients,[30,32,33] thus posing a real risk to the patient's physical and mental health and bodily integrity,[34] which can greatly affect the emotional relationship to the scar and the physical aspect of self-representation.[23,35] The word "trauma" comes from the verb "to punch through", and means any injury provoked by external effects;[36] this makes for symbolism regarding the sternum that is sawn through during a sternotomy, which is how surgeons can access the heart. In the present case study, both physical and psychological/symbolic traumatization is constituted. Trauma involves a threat to an individual's life or bodily integrity.[37] The experience of trauma raises questions about our relation to "having a body" and "living in the body" and makes troubling the centrality of the body in human existence. It is the overlooked problem of embodiment in discussions of trauma.[37] A scar from the past is a permanent sign of an experience with the body. In this way, it represents the past, but at the same time, it also embodies the presence of the person's inner world, in the mirror of the relationship with the body.[38] The traumatic experience is etched into the skin, which means that these scars are also associated with clearly perceptible physical changes.[23,35] These physical changes can cause a feeling of stigmatization in those affected.[6,23,35] Little literature is available on postoperative experiences with median sternotomy,[35,39,40] but it is instructive to consider the literature on other surgeries which leave prominent external marks, such as mastectomies and burns.[41–43] Mastectomy patients reported a loss of their femininity, dissatisfaction with their appearance, damage to their bodily integrity, reduced sexual attractiveness, and dissatisfaction with the scar, and they experience their body as a wounded entity, mutilated by its previous characteristics.[40] In a qualitative study of women with burn scars, it was found that integrating visible bodily changes proved particularly difficult,[44] which is consistent with Moss and Rosser,[45] according to which external appearance plays a key role in how we present ourselves to ourselves - and others. Therefore visible bodily changes can have an essential impact on our self-perception. In trauma and illness, we encounter a strangeness that we cannot contain. The psyche and the body are forced to absorb and integrate the unsolicited experience that has ripped open the shell of the relatively integrated Self and internalized it without ever becoming its own. The intrusion of foreignness into the boundaries of the Self leads to damage to the feeling of homeliness and alienation.[46]

Despite the above, the development of cardiac surgical rehabilitation and peri-operative protocol based on the embodiment paradigm is still pending, even though many studies emphasize the need for competent cardiac rehabilitation.[28,30,47,48] One of the important goals of this study is to lay the foundation stones of this protocol. We would have liked to understand the meaning of the median sternotomy scar and the operation itself for the patient. How are the two entities—the scar and the operation—related? How, in what way, can the scar become a part of identity?

2 | METHOD

2.1 | Procedure

This case study was carried out in the framework of the doctoral research of the first author. The study is approved by the Medical Research Council's Scientific and Research Ethics Committee (ETT TUKEB), authorization number: IV/3324-1/2022/EKU. Data collection for the survey took place in May 2022. Participation in the study was voluntary, anonymous, and based on informed consent, without any financial or other compensation. The interviewee signed an informed consent form.

2.2 | The participant

The interviewee is referred to as Esther. Her name was changed to safeguard confidentiality. At the time of the interviews, she was 42 years old, married, the mother of an 8-year-old boy, and was preparing for her second open heart surgery during the study. She had her first heart surgery at the age of 30 for a congenital heart valve abnormality. The surgery and the underlying illness were present as aggravating circumstances regarding her childbearing. We sought a female patient with a history of open heart surgery with median sternotomy, after the time of which at least 5 years have passed. One eligibility criterion for the study was being aged 18 years or over.

2.3 | Interpretative phenomenological analysis (IPA) and drawings

IPA is an interpretative, hermeneutic qualitative method. It employs an idiographic approach: it seeks to uncover the richly detailed meanings of experiences.[49–51] The researcher using this method is interested in the subjective interpretation of the interviewee's world of experience.[49] Its sensitivity also allows access to deep experiences that would be difficult to capture by other methods (e.g., content analysis, thematic analysis). It works with theoretical and targeted sampling, as well as with a homogeneous, small number of samples—even with a case study—about the phenomenon to be interpreted.[49,50] The main theoretical basis of the method is phenomenology, the science of experience, and at the same time a specific method of thinking itself. The focus of interest in phenomenology is how people experience the world through direct experience, how they perceive the world: the objects and themselves, how they remember their past, and how they experience their own emotions and personal identity.[49] The often difficult-to-grasp nature of the investigated phenomenon encouraged qualitative researchers to evoke visual content through which difficult-to-access experiences can be examined and transferred more efficiently and completely they become. By integrating them into the qualitative interviews, drawings can provide a deeper insight into the world of experience of the interviewee. This innovative technique can provide a more accurate idea

FIGURE 1 The interviewee herself, after the surgery.

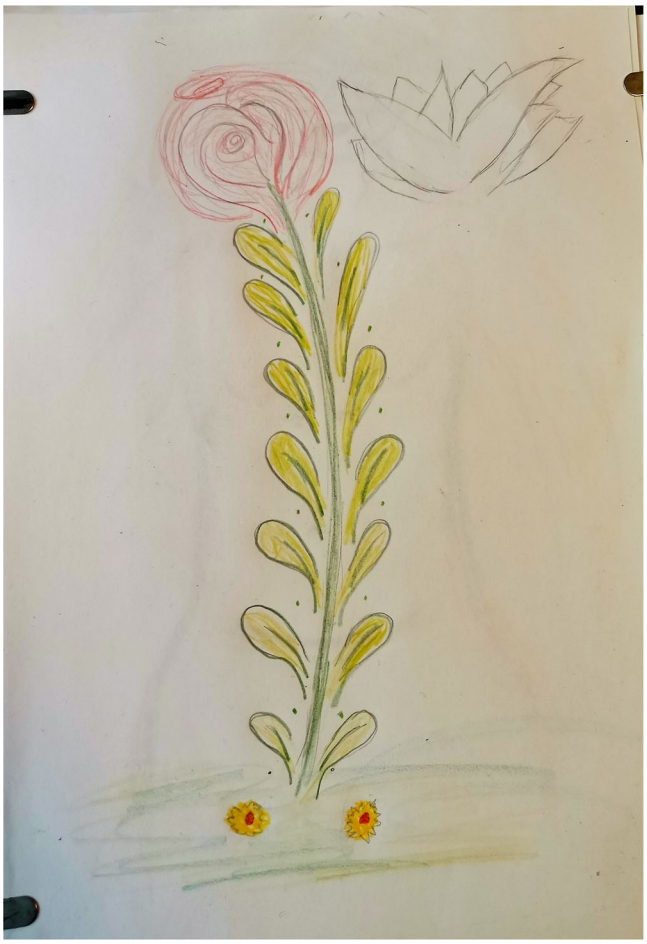

FIGURE 2 The scar, as the interviewee sees it.

of the patient's beliefs about the disease and attitudes. The use of any visual material to be integrated into the IPA methodology must comply with the IPA guidelines.[52] Compared with the traditional IPA methodological steps, the difference is in the data collection phase, as we not only interview the participant but also draw with her – which in this research took place between two interviews. It is important to emphasize that in this research there is no question of the interpretation or analysis of the drawings, but the interviewee comments on her drawings, obviously in the context of the interview. From a research point of view, the focus is exclusively on language. Metaphors and visual images beyond language can provide an important additional tool for examining "lived experience" within the context of IPA.[52]

2.4 | Data collection

We carried out three stages of data collection: the first step was a semistructured interview, the second was a drawing and finally, the third step was another interview, 3 weeks after the first one. Semistructured interviews were conducted via online video calls on Skype and recorded with a dictaphone. The questions and the structure of the interviews were focused on expressing the participant's general opinions and attitudes towards the research topic, and on expressing as freely as possible her interpretations, experiences, and attitudes towards the sternotomy scar and the underlying disease. The first interview lasted 1 h 50 min and the second 55 min. At the end of the first interview, the interviewer gave the participant instructions to prepare two drawings. The interviewee could use any drawing tool. These drawings were prepared by the interviewee on her own, then sent electronically to the interviewer. The second interview was then conducted, during which the interviewee was asked to talk about what she has drawn, to describe how drawings relate to her feelings and experiences about her scar and body. Instructions for the two drawings:

Please draw yourself, after your surgery! (Figure 1).

Please draw your scar, as you see it! (Figure 2).

We made a verbatim transcript of the interviews recorded with a dictaphone.

2.5 | Analysis

The IPA analysis follows several stages. In the first stage, we carefully read the interviews several times. During reading notes or comments, the ones which appear significant or interesting are

recorded. We make explanatory notes in the right margin, which may be initial reactions or linguistic or conceptual notes. At the end of noting phase, we have a series of exploratory notes that form the basis from which we will then formulate experimental statements. These psychologically relevant interpretations should be placed on the left margin. Then we organize these emerging themes into main and subthemes according to conceptual similarities.[51] As it is a case study there was no need to carry out an analysis between cases, after organizing experimental emerging themes, the study was written. To eliminate the bias related to the research, we should make an important mention of the phenomenon of researcher reflexivity. It means that we are aware of our feelings and our prior knowledge about the research topic.[51] Reflexivity was an integral part of our research process including self-reflective work before interviewing or writing a research diary accompanying the research.

3 | RESULTS AND DISCUSSION

In our study, we present the embodiment experience of a 42-year-old woman who underwent open-heart surgery, through the analysis of three personal experimental themes. These are "The experience of the traumatized body", "Relation to the traumatized body", and "Reintegration of the traumatized body". Our results show the long process of the integration of the traumatic experience through the perspective of the lived body.

3.1 | The experience of the traumatized body

3.1.1 | Characteristics of the traumatized body

The difference between the physical reality of the flesh and bone as an objective being and the lived(-through) body experience—and finally, its integration—is a key guide to the information gained from this study. Open heart surgery – being interpreted in conjunction with its visible signs written onto the body –, as seen from the perspective of the embodiment paradigm is a traumatic experience in which the concerned person is alienated from his/her own body that is deprived of its integration. The period surrounding the heart surgery is a traumatic experience for our interviewee, Esther. She describes the experience in powerful terms, which she interprets as a "rupture" in the narrative of her life.

> The operation, even though I was young and reportedly coped very well, I felt broken. Not just mentally, but physically, I was very broken. It was a very big rupture.

For Esther, the experience of realizing her physical alienation was a defining one in the early stages of recovery. This foreignness not only means the unfamiliarity of the body visibly and perceptibly changed by the median sternotomy scar but also the experience of the dissociation of the body deprived of its integrity from the Self.[53]

> For a very long time, my reflection felt unfamiliar. I knew in my mind that it was me: it was my face, my hair… Sometimes I passed in front of the mirror and I retrieved my head wondering who that person was (…) It's a destructive condition when you recognize yourself as a stranger.

Dissociation is a self-defense mechanism activated by the trauma experience, which makes what happened bearable through a perception that is detached from reality to a certain extent. Stressful stimuli can also appear in the body experience, body sensations and certain body parts are rejected and dissociated.[38] Esther's whole world is taken over by the present time. The mark of the trauma of the operation written on her body is a constant reminder of what happened to her, the memory of body and soul is manifested on her dissociated skin.

> "(…) it does not go away without a trace, it is here, it is present on my skin, it reminds me, but also from the inside and from time to time it surfaces, and I often intensely relive its most difficult feelings." – the return of the present and emotional flooding is one of the important characteristics of the traumatic experience.

3.1.2 | The abused body

The sternotomy scar, which is the result of the surgical procedure, is a symbol of the traumatic series of events; the world of experiences and meanings associated with the disease, the heart operation, and the postoperative period. The scar, as trauma written on the body, conveys to Esther a world of emotions of pain and violent intervention.

> This thing (scar) has a traumatic origin, because practically… this surgery was violence committed against my body. (…) To have a 30 cm scar on your chest, to be cut into pieces, that's not normal. (…) You are in a lot of pain when your bones are broken like this (…) when I think about it, so the whole memory is a very dominant part of the scar (…) No, I didn't like what I saw in the mirror.

Esther not only describes her altered, "violated" body as alien and painful, but also rejects it, however, the rejection of her bodily sensations prevents her from connecting with it. In her cold, objective formulation, it seems as if her body did not belong to her, was merely a foreign object, a "thing". For Esther, the scar is not just a cut through the skin, tissues, and bone, but a symbol of the serious damage to her appearance, her image of herself, and her bodily integrity, a scar that can evoke the events in the present as a memory

trace. She describes the "violence inflicted on her body" in powerful and naturalistic images.

> I knew I was going to be tied up. I knew I would be naked. I knew I was going to get a catheter, a cannula. That… that everyone would see my breasts… I also knew how they were going to see my bone in half, how they were going to break me apart (…)to stop my heartbeat, and how it will be removed from my body. They broke your bones roughly, they were practically stacking your organs here and there in your body.

Esther's words convey not only a woundedness but also a world of sexually abused experience; the operation is a rough intervention not only in her physical integrity but also in her sexuality. The boundaries of her body are questioned, even threatened, since what was outside her until now has now entered her body, insulted her, abused her, and made her alien to herself by disrupting the functioning of her body as a lived body and as a woman. The body is the medium of the traumatic intervention; therefore, the experience of the trauma is recorded in the body—or on the body.[54] In this context, physical abuse and sexual abuse (Young, 1992) reveal a similar world of experiences focusing on dissociation from the abused body. According to Fuchs,[13] the "being-sick" mode of existence is to be found in the alienation and disorder of the lived body, the Leib. Exactly this is how it becomes Körper (physical body); the body that lived through illness and that is existing with illness becomes an owned body-object. The subject's words convey: "I have a heart that is sick, a wounded body that has become ugly and is out of my control and lived experience". In the experience of suffering, the Leib-Körper distinction is blurred. Esther herself is also her own sick heart, in her bodily experience she does not have body parts or pain, but she is the sick body part, she is the pain itself. Just as a sick person experiences being chained and foreign, or being in a sick body and being separated, she experiences the homeliness and then the foreignness of her body at the same time.

3.2 | The relation to the traumatized body

3.2.1 | Body experienced by the look of others

Esther's scar healed as a keloid scar, which means abnormal scar tissue. A condition of intense pain and inflammation, where the scar heals much more slowly and painfully than usual. It is as if she is at a loss for words when sharing the experience of the lived physical pain as if to say that her body itself has become a pain.

> My posture… everything about me changed in such a way that… it conveyed this terrible great pain and this terrible great struggle. (…) The scar itself…and all that happened to me, I was ashamed for a very long time. My scar healed as a keloid scar. So it was very - very ugly for a very long time. And it took a long time to get it fixed. And I was hunched over, my posture was, you know, tightening up because of the keloid, because it was very painful. So it hurt me inside and out, it hurt my soul, and it hurt my body to heal. This whole thing hurt everywhere.

When someone gets into focus of looks around oneself, he/she realizes that one exists as an image for Others, and people construct the illusion of themselves from those images.[55] In Esther's story, the stigmatization construed by the outside world has become a basic experience, the painful experience of living it through can be truly understood when we posit that skin—the place of incorporation of the scar—has a liminal quality, it marks a boundary, like a kind of a membrane, between the inner space of the body and the public space of the outside world, and the transition between the two—as a consequence of lost agency—is vulnerable and permeable.[31] According to Sartre—who, as opposed to Merleau-Ponty, assigned a negative quality to looks being constituted in the context of intersubjectivity—"shame is admitting that I am indeed the object that others are looking at and are making a judgement about".[56,p.323] The bodily experience and manifestation of shame are accompanied by tensions and anxiety; it presents itself in the form of hard and stiff sensations not only in the mental sphere but also in the bodily sphere.[57] Experiencing the bodily visibility of the traumatic experience has forced a peculiar realization on Esther: she sees herself in the mirror of reactions coming from strangers, doctors, and Significant Others (her husband and her son)—after virtually having lost herself. The obvious background for this can be the fact that in Western cultures, a scar is usually seen as hostile, and even as disgusting.[58] In line with the current expectations of society, the sight of a body that is wounded and "cut in pieces" is not compatible with the normative female body image. As an external observer, living with scars on the body resulting from health damage might seem to be frightening from multiple aspects; having a scar can easily become stigmatizing,[59] as in our society beauty and perfection plays a prominent role, particularly among women. These may also create tensions in social interactions and interpersonal relationships; therefore, adjusting to unexpected and dramatic changes in the body can be one of the biggest challenges in the lives of the people concerned. Existing studies unequivocally reveal that people having scars from illnesses experience shame, and try to keep their scars away from other people's sight.[35,60,61] Esther also said that in the beginning, when she had mostly hostile feelings towards the scar, she also tried to hide it from the world with her clothes and posture.

> First I always covered it up… so that I chose a bathing suit and wore things so that it wouldn't show.

As a complex affective phenomenon, shame includes both the mental and physical spheres.[57] According to Stupiggia,[62] the bodily experience of the traumatic experiences that one went through often

manifests itself as a little deer that is always ready to run away or an animal that does everything to make itself unapproachable and invisible.

> People looked at me… and it didn't feel good… And then, as they looked at it (the scar) and saw that it was ugly… so people's faces reflect their emotions (…) And when I saw their gaze, I always felt this pity and this regret. I felt ashamed… and I felt and experienced it in every cell of my being.

In Esther's experience, shame expresses the exposure to the world, the feeling of "being seen", in which the vulnerability of the "wounded" and marked body is created by the weight of the gaze.

> At the beginning, I thought that everybody was looking at, 'Oh my God, this poor young girl, what she's been through, and what she looks like, and how her body is disfigured.' (…) People stigmatize those who are different. It's very easy. And this stigma, so I had a visible mark on me. I still have it. To this day.

In addition to appearance, the fact that in Esther's mind, problems with the heart stem from neglect of self-care may play a role in her experience of shame. She believes that when people see the mark of a heart operation on her chest, they associate this symbol with an unhealthy lifestyle.

> They think it makes you weak! So, it's… it's a surgery that covers a pretty big area. You're not as strong. And I wasn't looking after myself. That's what they think.

Experiences of social stigma and rejection are very painful for Esther and contribute to self-rejection, negative beliefs about herself and her appearance, as well as the feeling of threat and lack of control. One of the reasons for experiencing shame may be that the scar can hide - or reveal - the patient's secret, which for the experiencer speaks of a moral value related to a kind of physical quality.[58] It is as if the trace of the disease on the body conveys a lack of care and self-care—as Esther also reported. Arthur Frank identifies the issue of control as the main issue related to physicality in the relationship between health and illness.[63] In his model, the loss of control appears independently of the influence of the person suffering from the disease. Nowadays, however, the issue of maintaining control is becoming increasingly prominent; one of the main messages of the health-related discourse is that the individual is responsible for avoiding risk.[9] And this can lead to the "health-chauvinist" point of view, according to which, if someone is unable to lead a suitable health-conscious lifestyle and change their risk-taking behaviour, they can only blame it on their failure, the inability to "take care of oneself".[9,p.114] According to this approach, the concepts of healthy and unhealthy will be markers of normal and abnormal identity and a person's moral worth. Esther constitutes herself as a patient, that is, as unhealthy, and in her self-representation, this goes hand in hand with her moral questionability. It is clear, however, that the individual cannot have power over certain diseases and physical conditions.[9]

3.2.2 | As a woman

The scar has a powerful impact on the experience of femininity, as it is located in the part of the body that is symbolically the essential site of femininity. The "ugly" and "painful" scar on her chest is experienced by Esther as a loss of her sexuality and femininity. What is striking, however, is the shift in perspective in which Esther now speaks of the emotions she attributes to the scar. Here, we see a kind of reappropriation: the previously rejected, alien, and hated enemy becomes a personified, sentient part of the self.

> It was a very stubborn scar. It was very attached to me with all its ugliness and sadness. I had to treat it, I had to be nice to it, even though I hated it… And it was painful to look at it for a very long time. (…) The first sexual intercourse… was difficult, very difficult for my femininity (…) For me, the most difficult thing in all this was to put my femininity in place.

She compares the wearing of the scar with the wearing of femininity, implying that both must be learned to be worn with dignity, and both must be fought for. Her desire for this, as well as the incompleteness of its fulfilment, is shown by the lotus flower depicted in the drawing (Figure 2) as a symbol of femininity only in outline (in contrast to the colourful, sprawling, leafy flower symbolizing motherhood).

> As I got better, I began to long to regain some of that feeling, to relive my femininity. (…) I am not saying that I experience this scar as part of my femininity, but I try to be a woman along with it. And… to that, you have to learn to wear this scar – as well as femininity.

In the integration process of the scar, the experience of femininity became essential. The literature exploring experiences with sternotomy scars unanimously shows that the changed body negatively affects women's self-image.[35,40] The present case study confirms this, supplemented by the subjective experience that reliving the lost femininity becomes essential in the integration process of the scar, and these two phenomena can reinforce each other.

3.3 | Reintegration of the traumatized body

3.3.1 | The role of body memory

The skin and the "skin-self" are not only present as a protective wall of the subject in Esther's world of experience, but also appear as a

manifestation of memories. The meaning of the traumatic experience of the operation is incorporated into the scar and the scar into the subject.

> When I look at it, I don't see just a cut on my skin, but… but what happened, my memories, everything that happened there, then, that I experienced… we experienced. Everything is written, here, into my skin, into this scar. (…) We can no longer change the fact that this is happening and that it has left its mark on our bodies and our souls too. (…) As the scar was healing, the redness went away, and the skin was getting lighter… the color of the skin, yes, the color of my skin became its color too. And it became flat and was subsiding as it healed. So that this assault on me, this pain, as I was letting it go… it was getting better and better. And it became more and more a part of me

This may also mean that understanding the relationship to the scar as an independent entity can support the understanding of the relationship to the traumatic experience behind the creation of the scar. Esther's feelings about the surgery manifest (are brought to life) on her skin in the process of interpreting the relationship to the scar. She not only relates to the scar as a physical entity but also explicitly lives her feelings in the experience. This experience supports the possibility of reworking traumatic memories stored in the bodily memory. The past can be represented not only through the intentional act of recollection but also with the help of the lived body, the Leib.[64] Based on our study, it seems that a patient who has lost her bodily integrity might be able to reconstruct the Self through the possibilities of body memory.[31] For Esther, the scar that presents itself as the symbol of the traumatic experience is a kind of trigger for the painful memories, proprioception, touch, smells, and hearing can activate past events. Body memory is "the somatic echo of the lived experiences' memory traces, and it constitutes the possibility condition of opening up to the world".[65,p.38] Unconscious memories and repressions also appear in the symbolic expressions of the lived body; what is repressed spreads out in the life world and subliminally affects behaviour (Fuchs[64] cited in Horváth[65]). This thought may manifest itself in Esther's stooping posture, which carried the feelings that she experienced, and her bodily behaviour constituted herself: "The bodily sensation of (…) shame is expressed by my reddening face, boredom by my yawning mouth, and anxiety by my trembling voice"[66,p.46]; in this context, Esther's stooping posture is the expression of the lived pain and shame itself. Her bodily experience is expressed in her movements, way of walking, and body posture.

3.3.2 | Touch as affirmation

This theme is essentially about the power of the senses, especially touch, and intimacy, and their role in the recovery of the damage to bodily integrity. Schilder developed Freud's[67] theory in detail, according to which the body, especially the surface of the body, is the source of the perceptions from which the self originates (Schilder[68] cited in Látos[69]). The archaic elements of the preverbal period can be connected to the touch of the skin. Anzieu calls the body surface possessed by libido the "skin-self", which is constituted by touch (Anzieu[70] cited in Fehér[20]). His theory sheds light on the psychosomatic (physical) nature of the early relationship, which is of decisive importance in the development of personality. In the early stages of development, the child experiences herself/himself with the help of the touch of the Significant Other, that is, the "skin-self". In the beginning, the mother and her child have a common skin: the mother takes care of the task of protection, and then the skin self is formed in the child from the experiences after the separation, which represents permanence and security.[69] The surface of the body not only separates and protects from stimuli from the outside world but also plays an important role in preventing the disintegration of the inner world.[38] According to Rank,[71] Jung,[72] and Reich,[73] the body boundary is primarily represented by the skin, which is compared with a protective container, a wall that surrounds and prevents disintegration. The main task of this protective wall is the retention and filtering of inundating stimuli, as well as containment.[38] In Esther's case, this protective function was endangered as a result of the traumatic experience associated with the loss of bodily integrity and the injury/vulnerability of the skin self. The scar symbolizing the traumatic experience forms the basis of the experience of injury to the skin-self and, with it, the danger of the subject falling apart, that is, the acceptance of the scar is a fundamental condition for the reintegration of the body and the subject. Through the embodiment paradigm, the lived experiences of the body can be investigated, the focus of which is the awareness of bodily experiences.[74] This awareness significantly affects the safe connection to one's bodily sensations and emotions.[75] One of the cornerstones of a positive experience of the body is the proper perception and reception of touch, as well as the ability to do all of these - which can be a serious difficulty for an individual experiencing the loss of bodily integrity.[76] In the present context, when discussing the importance of touch, we emphasize the power of the touch of the significant Other and the affected person towards herself and the role it plays in restoring the damage to bodily integrity. The touch and sight of the scar, after the initial experience of strangeness, takes on a different quality. It can recall for Esther what had happened to her, and it functions as a memento. This presentness is now about getting to know the altered body, about the initial steps of an intimate relationship that are essential in the process of integration–reintegration.

> I touch it, I look at it from time to time, to see if it has changed its consistency, but it's peaceful… almost leathery. I've stroked it several times to check its surface. How it even fits my ribs, my bones, how it goes across my body even in its ugly state. Even when it was painful.

A new affirmative form of touching oneself emerges in the process of integration when the patient becomes able to face the

traumatic experience that impacted him/her; when he/she stops treating his/her own alienated body as an object and makes the transition to treating it in a more intimate, tender and private way. Just like Esther is now capable of touching – and seeing – tenderly and with open attention the part of her body that she formerly turned to with fear and rageful intentions. This is a change of perspective that can be interpreted in a psychodynamic way, during which the internalized persecuting identity gives way to a new intrapsychic part of the Ego that is filled with more love and more respect.[62] In this process, and especially in the search for interpretation, the outside world, the Significant Other can play a cardinal role. The touch of Esther's little boy, the tactile connection, functions as an emotional bridge and can make the traumatic, subjective, and indivisible world of experience shareable and acceptable.

> It was very interesting how he once ran his little finger along my…scar. And he asked me what this was. And I told him very naturally that it was because of this scar that we were alive… He stroked it again and left. And then I was left there alone, and my God, I say, why did I say that! And then I realized that that's the point. Also, I'm practically alive because of this scar. So that's where something changed in me.

It was in the above quote that Esther first called it a "scar", rather than an impersonal indicator or an inanimate, thing-like adjective. This also symbolizes an active experience of integration, in which the touch of her little son plays a very important role. It's as if shame and pain would be replaced by childlike curiosity and openness.

According to psychoanalytic developmental psychology, at the beginning of spiritual development, the focus is not on the experience of one's own body, but on physical fusion: "my body about the other body".[18] Bodily mutual attunement is, therefore, the origin from which one's own body and self-consciousness develop, that is, bodily interaction precedes consciousness.[20] According to the findings dealing with physical experience, "even before I could express my will, I was already tuning in to the others from a physical point of view". In this sense, the body becomes a "body lived in a relationship",[77,p.83] which exists only as a body functioning in interaction.

> As the scar was healing, I was practically healing with it. And as I've said, after that, my little boy touched it on more occasions, and then it became so natural for me to touch it differently, and for it to be a part of me in a different way.

3.3.3 | The new family member: Corporeal posttraumatic growth (PTG)

PTG is typically observed in five domains,[78] but in addition to many illness experiences,[79,80] the experience of open heart surgery appears to be a sixth domain of growth which can open a path towards the body. A body alienated through experiencing trauma due to bodily illness may be capable of reintegration,[63,80] which thereby may increase body esteem, the amount of attention paid to the body as well as self-care.[80] Rediscovered body esteem and feeling of personal power are important areas of PTG. It is important to note that in Esther's case, this growth experience is symbolized by the scar; thus, growth is being constituted through her body.[81] have studied the PTG of patients who went through coronary artery surgery. During this study, they broadened the knowledge base regarding the action and cognitive dimensions of growth. According to our present knowledge, this is the first study concerning cardiovascular patients during which the bodily dimension of PTG was found. This might also mean (in line with Hefferon's conclusions from 2012) that the outcome of the growth potential in bodily illnesses or of PTG might be different from the specificities of cognitive or externally-induced traumatic experiences. In this study, the self-care of the interviewee towards her own body is an important part of the growth path, which primarily manifests itself in the touching of herself and her Significant Others. Touch is a sensory function of paramount importance for humans, as the sensing person and the sensed person are closest to each other in this case.[66] Touching herself and the experience of touching Significant Others is of essential importance for Esther. Touch presupposes that the body is opening up to the world, and it becomes free exactly in this way.[6,82] Overcoming the experience of trauma that impacted the body can emerge in the experience of transforming the relationship with the lived body, through the manifestation of self-care, intimacy, (self-esteem, and tenderness.[62] Through the affirmative presence and touch of the significant other, a new opportunity for giving meaning is created for Esther: the scar is now constituted as a positive symbol, thus becoming the core of the PTN, since it is through it that the trauma experience is given meaning.

> We are alive thanks to this. It is thanks to this scar that also I am alive. And that's why we have this little child in our lives, because…because if it hadn't been for this surgery, he couldn't have been born.

In light of Esther's words, the meaning of the scar already goes beyond being a mere marker of the operation, as it means survival itself. Surgery and thus the scar also play a role in the concept of motherhood. The condition for experiencing the desired maternal identity was the replacement of the valve that had become sick - or "worn out" in our interviewee, Esther's words, that is, heart surgery. In the process of the search for meaning, the reframing of the operation supports the processing of the traumatic experience as a pledge of giving-birth and birth.

From Esther's account, we see that the traumatic experience of open-heart surgery may even be a pathway to PTG. We were able to move in this direction of interpretation in a meaningful way during the analysis of the second interview about the drawing test. The creation of the drawings and the subsequent discussion of them was of paramount importance in revealing, and indeed understanding

Esther's relationship to the scar. It seems, therefore, that such a traumatic memory is limited in the way it can be told in words, and is rather captured in vivid colours, images, and feelings, without being encoded in language - and can be reproduced also in this way. Previously in the field of health and illness within psychology,[83] used visual data to explore women's experiences of heart disease. The use of visual methods enables the expression of emotions, and experiences, which through words would often be difficult and painful. The drawings offer a different kind of insight into the world of experience and give meaning like written or spoken words because through them the unspeakable experiences can also be expressed.[52] According to Guillemin,[83] the images reveal to us, researchers, how the participant experiences and interprets his illness. The power of the image stems from his ability to recall the invisible: feelings and experiences that may not even be able to be told.

> For me, the scar itself has a root i.e. inside my body. So, it feeds on me, and I feed on it. It feeds from there and from my soul so to speak, i.e., it belongs to me. It's a part of me.

Esther has not only accepted what happened but is proud of the person she could become because of what happened. She is also proud of her scar, which she no longer sees in the mirror of others, but experiences as an essential part of her Self. "It feeds on me, and I feed on it…" she said, interpreting the drawing (Figure 2) of the scar as a flower taking root in her body. In the "violence done to her body", she sprouted a flower from seeds sown in her body, the root of which feeds on her body and soul.

> At first this scar is a burden, a very difficult thing, then slowly but surely it becomes a part of me. It feeds from there and from my soul. (…) So, this assault on me, this pain, as I was letting it go…it was getting better and better at the same time. And now it's completely good. And now it is one with me. So, the truth is, I couldn't do it without it…so it belongs to me and we're like family.

Thus, the previously hated alien agent becomes an intimate, loving, and essential "family member", and the fragmented trauma experience becomes a coherent, whole narrative. Therefore, it is not only the reintegration of the body alienated as a result of the traumatic experience, but also the redefinition of the body and thus of the Self.[84] argues that the most important thing in coping is proactively redefining the body, to "reconquer" it. Her interviewee, who underwent a mastectomy, found a special way to do this: she got a tattoo done on the scar left after the removal of her breast, and the tattoo became an integral part of the story she told about her illness and through which she regained a sense of personal power and control. Thus, the storyteller also wrote "the story of her body through her body".[46] Esther wrote the story of her body through her drawing.

> Whoever does not accept my family, that does not accept me. Whoever does not accept my scar, does not accept me. Because it goes with me, it belongs to me. This is how I am a complete circle along with this story.

Her developing sensual care for the scar and the striking change in her experience of her body are constituted by the same phenomenon, the bodily-social approach. While initially, the scar appears to her as a sign—as a stigma—associated with the desire to become invisible, to be transparent, it later appears to her as a phenomenon visible - and apparent in itself. The adaptation to the scar and then the integration did not occur because the scar has disappeared or become transparent, but because it has lost its signifying power, the body ceased to be an intentional object.[55] Esther no longer experienced herself as a stigmatized candidate.

> It is a flower that has opened (the scar). At the time of the operation they had sown its seed and then it was a great suffering for it to grow, but… I think it has become a flower.

In the concept of positive psychology, creative activity evokes a flow experience as a result of mental energy transfer forward, and this goes along with the development of the self, its concentration, and its own by gaining power over his spiritual energies.[85]

3.4 | Implications for practice

As it emerges from our case study, the traumatic experience of the operation shows similarities in many points with the trauma of body abuse. As a result of all these experiences, the patient's relationship with her body changes. Starting from this, the therapeutic work with those involved necessarily takes place on several levels: with the quality of the therapeutic relationship in mind, it is inevitable to deal with the body in addition to verbality, but in the application of interventions, it is recommended to deviate from traditional tools.[62]

In terms of preparation for open heart surgery and the physical-spiritual regeneration process from heart surgery, building the embodiment perspective into a treatment protocol can be a tool that supports the person in developing an alternative body experience and personal agency - in contrast to the cognitive and biological perspectives, which only attribute a peripheral role to the lived body compared with the functioning of consciousness. Therapeutic trends that prioritize the body and body image are primarily effective in reducing negative body experiences and negative body image and do not support body-related self-care and body care, which are important elements of a positive body image.[75,76] This is also why it is fundamental that psychological research dealing with the body examines subjective bodily experiences in addition to the cognitive content of body image. As we can see, touch plays an essential role in processing the traumatic experience. This is perhaps not surprising,

knowing that touch is the most basic means of reassurance, which is still lacking in most therapeutic procedures.[86] The embodiment paradigm provides a perspective for this, which can reveal phenomena such as body awareness and the connection to the individual's bodily sensations, experiences, and experiences. The body-centred somato-psychotherapeutic methods (Biosystemic Somato-psychotherapy, Integrative Core Dynamics [ICD], Focusing) are particularly important in exploring the relationship between embodiment and trauma, in which the concept of trauma is of central importance due to their analytical roots—which can be considered as a fundamentally Reichian trend. When developing a therapeutic protocol, it is also worth including therapeutic methods that can help the development of individual agency (existential analysis, Simonton therapy), support self-care, and turn the body into a resource. In addition, movement-based methods are important, which help harmonize the lived body with the body image (dance/movement therapy, yoga).

Based on our study, it can be established that the integration of drawings into the interview, their preparation, and interpretation is an important part of the creation of the interviewee's narrative, the integration of her body image and self-image. Artworks made of the body can establish the connection of those involved with their body and the process of finding meaning. Therefore, it is worth supplementing the body-centred work with art therapy sessions, since—in the words of Johnson[87,p.13]—"Art was probably originally a means of expressing and alleviating the traumatic experience".

4 | CONCLUSIONS

The body and the bodily experience plays an essential role in the formation, healing process, and symbolism of a scar. The central core of the traumatic experience of open heart surgery is the attack against the patient's sensation of bodily integrity. The interviewee experiences the surgery as abuse committed on her body, a memory that is deeply etched both in the physical memory and in the form of a scar on the skin. Based on our study, it seems that the corporeal dimension of PTG may develop after the traumatic experience of heart surgery. Intimacy, sensitive rediscovery of oneself, and an affirmative form of being touched by significant Others play an important role in this process. In this case study, the objective reality of the heart as "sick" flesh and the "broken, pierced" bone (Körper), as well as the dissociation - and then its integration - of the lived, living body experience (Leib) are outlined. An important conclusion of our study is that understanding the relationship to the scar as a separate entity may support understanding the relationship to the traumatic experience itself that caused the scar. An important way to understand these relationships may be the examination of drawings integrated into the in-depth interview, which offers a new, deeper, and more complex interpretation than the linguistic interpretation. Images can work like metaphors: they can be a "safe bridge" to express feelings that are beyond they are too painful to express directly or verbally.[88] The power of the image stems from its ability to recall the invisible: feelings and experiences that may not even be able to be told.

4.1 | Limitations and strengths

The limitations of the study are, on the one hand, the IPA method and on the other hand, the limits of the case study itself, such as the small sample, object specificity, and the difficulty to establish interrelationships or generalizations. Another limitation of the study is the fact that the embodiment theory may be easily subject to criticism from a scientific point of view, as it is difficult to support it using the natural sciences. However, one of the benefits of this research is the access to individual and profound experiences, especially about the integration of the examination of drawing into the interview, which has resulted in a particularly rich and deeply-rooted knowledge base.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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