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Adults diagnosed with gynecologic cancer and their relationship with their body: A study on the supportive role of yoga using interpretative phenomenological analysis

Jenson Price [a], Jennifer Brunet [a,b,c,*]

[a] School of Human Kinetics, University of Ottawa, Ottawa, Ontario, Canada
[b] Cancer Therapeutic Program, Ottawa Hospital Research Institute, The Ottawa Hospital, Ottawa, Ontario, Canada
[c] Institut du savoir Montfort, Hôpital Montfort, Ottawa, Ontario, Canada

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ABSTRACT

The purpose of this qualitative study was to explore the thoughts, feelings, attitudes, and perceptions of adults diagnosed with gynecologic cancer on their body, and the role of yoga in shaping these aspects. A phenomenological research design was used. Fifteen women (*M*age=50.1 ± 13.5 years, range=28–66) who practice yoga at least once/week completed a sociodemographic survey online, two semi-structured interviews, and a 30-day journal online. Quantitative data were analysed using descriptive statistics. Qualitative data were analysed using interpretative phenomenological analysis. Participants' responses and the authors' interpretations were summarized into four main superordinate themes: (1) internal monologue of the changed body, (2) balancing act between acceptance and improvement, (3) value of taking time to prioritize oneself by practicing yoga, and (4) transformative catalysts of expectation and mindset on body-related self-perceptions after yoga. Body functionality and appearance, and their sexual health were often deeply interconnected, and impacted participants' self-perceptions and behaviours. Yoga was a vehicle for growth and acceptance; however, participants' expectations and mindsets before and during yoga could lead to negative self-perceptions after yoga. The findings underscore the importance of integrating yoga – a holistic practice – into survivorship care programs, while emphasizing the need to address expectations and attitudes that could hinder positive outcomes.

1. Introduction

Body image is a multidimensional construct focused on *both* the body's appearance and function that broadly captures perceptual (i.e., how one sees and describes their body's appearance and function), cognitive (i.e., how one thinks about their body's appearance and function), affective (i.e., how one feels about their body's appearance and function), attitudinal (i.e., how one evaluates or judges their body's appearance and function), and behavioural (e.g., how one behaves based on their perceptions, thoughts, feelings, and attitudes about body appearance and function) dimensions (Cash & Smolak, 2011). Body image research in oncology has primarily focused on body appearance, specifically investigating weight and shape concerns among breast cancer survivors (Brunet et al., 2022; Koçan & Gürsoy, 2016; Paterson et al., 2016). In addition, theory, research, and practice dedicated to improving body image has mostly focused on negative body image outcomes (e.g., body shame, body dissatisfaction) under the assumption a lack of negative body image equates to positive body image. However, experts have argued that by only studying the negative aspects of body image there is insufficient understanding of body image and psychological health (Cash & Smolak, 2011). While negative body image can be broadly understood as general dissatisfaction with the body (Cash & Smolak, 2011), positive body image captures an overarching love and respect for the body (see Cash & Smolak, 2011; Tylka & Wood-Barcalow, 2015b for more).

Scholars have acknowledged that part of cultivating a positive body image is the presence of functionality appreciation and acceptance, which is the admiration, respect, and honour an individual has towards the body for what it is capable of doing (Alleva et al., 2017; Tylka & Wood-Barcalow, 2015a, 2015b). The body's capabilities is known as body functionality, a multifaceted construct that captures the body's physical capacities and internal processes (e.g., muscular strength,

* Corresponding author at: School of Human Kinetics, University of Ottawa, Ottawa, Ontario, Canada.
E-mail addresses: jenson.price@uottawa.ca (J. Price), jennifer.brunet@uottawa.ca (J. Brunet).

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physical stamina), creative endeavours (e.g., singing, painting), bodily senses and sensations (e.g., vision, taste, pain), communication with others (e.g., hearing, speaking, body language), and self-care (e.g., showering; Alleva et al., 2015). Several studies have shown that people experiencing changes to their body due to trauma, aging, and/or illness may experience psychosocial challenges and difficulties adjusting to a "new" body (Bailey et al., 2015; Poole et al., 2023; Şimsek et al., 2020; Thomas et al., 2019). These changes can lead to a perceived loss of valuable leisure activities (Poole et al., 2023), a higher valuation for appearing capable (Thomas et al., 2019), and appreciation of function gains as important for positive body image (Bailey et al., 2015). Thus, body functionality warrants further attention within populations experiencing changes to their body, such as adults diagnosed with cancer.

Researching body appearance among adults who have completed gynecologic cancer treatment is important as many changes related to appearance occur (e.g., weight gain, scars; de Souza et al., 2021), which are often inconsistent with Western appearance ideals. Moreover, researching body functionality in this population is critical because gynecologic cancer and curative treatments affect several body functions including reduced strength and mobility, lower-limb lymphedema, urinary inconsistence, and medically-induced menopause (de Souza et al., 2021). In addition, unmanaged menopausal symptoms like hot flashes, changes in mood, and difficulty sleeping may impact overall quality of life, function, and desire for intimacy (Harris, 2019). The entire cancer trajectory (i.e., tumour growth through survivorship) of gynecologic cancer can dramatically impact adults' sexuality, sexual functioning, intimate relationships, and sense of self (Abbott-Anderson & Kwekkeboom, 2012). Nearly half of adults diagnosed with gynecologic cancer report less sexual activity than prior to their cancer diagnosis (Hopkins et al., 2015; McCallum et al., 2014), and between 33% and 100% report sexual concerns following cancer treatment (Brotto et al., 2010), including challenges with sexual interest and arousal, orgasm, and genito-pelvic pain (de Souza et al., 2021). These changes to their body functionality can contribute to several psychosocial side effects, including a loss of femininity and feelings of not being whole or a true woman (Boding et al., 2023; de Souza et al., 2021). Further, an unsupportive intimate partner can exacerbate concerns related to body functionality (e.g., reduced emotional connection due to shame associated with reduced sexual functionality; Abbott-Anderson et al., 2020). Thus, adults who have completed gynecologic cancer treatment may be particularly susceptible to body image concerns due to changes in appearance and function (physical and sexual; Wilson et al., 2021), and living with the impact of cancer; accordingly, to comprehensively understand body image, the dual experiences in body image need to be explored further.

Beyond better understanding body functionality, it is crucial to explore strategies for improving the body image of adults who have completed gynecologic cancer treatment and their relationship with their body. There is evidence that supports the notion that yoga is an embodying activity that can improve body image (Halliwell et al., 2019; Neumark-Sztainer et al., 2018). Yoga is an ancient practice that involves physical movement (i.e., asanas), focused breathing (i.e., pranayama), and meditation (i.e., dhyana; Swamiji, 1998). The practice of yoga addresses, and is aimed at integrating, the physical, mental, emotional, and spiritual aspects of one's being (Swamiji, 1998). An underlying tenet of yoga is focused on developing a positive relationship with one's body, including movement in accordance with the needs of one's body in the present moment, enhanced body awareness, and promotion of self-compassion (Swamiji, 1998). Therefore, yoga could be helpful in promoting greater body satisfaction and attunement to the body's internal states and capabilities (i.e., body functionality), potentially encouraging appreciation and acceptance of the body while counteracting the tendency to focus on body appearance (Cox & Tylka, 2022). However, the majority of research in oncology has focused on testing the effects of yoga on quality of life among women diagnosed with breast cancer (Cramer et al., 2017). It is vital to explore the experiences of adults who have completed treatment for gynecologic cancer because their experience might differ from that of adults diagnosed with breast cancer, whose concerns about their body often intersect with more visible changes to the body and societal perceptions of beauty (Brunet et al., 2022). Though it is possible that adults who have completed treatment for gynecologic cancer experience similar benefits to those reported by breast cancer and other adults diagnosed with cancer (Price et al., 2023a), engaging in the introspection associated with yoga could further aid in reconciliation with internal bio-psycho-social changes and the restoration of a sense of wellbeing. However, if and how this could occur needs to be investigated. Indeed, whilst a recent qualitative meta-synthesis of women's experiences participating in yoga after a cancer diagnosis revealed that women experience increased positive beliefs about the self, reduced inner critiques, and freeing of oneself from negative perceptions about the body, this synthesis also showed that adults diagnosed with gynecologic cancer are underrepresented in research (Price et al., 2023a).

1.1. Explaining the relationship between yoga and body image

Several theoretical and/or conceptual approaches have been applied to explain the influence of yoga on promoting a positive relationship with one's body. For example, the *embodiment model of positive body image* (Menzel & Levine, 2011) identifies participation in embodying activities as a key factor in the development of positive body image through mind-body integration. Embodying activities encourage body awareness, physical empowerment and competence, and deep absorption in the activity. Yoga has been shown to be an embodying activity; yoga participation was associated with greater positive body image, embodiment, and reduced self-objectification, with the relationship between yoga participation and positive body image being serially mediated by increased embodiment and reduced self-objectification (Mahlo & Tiggemann, 2016). Another example is the *biopsychosocial model* (Engel, 1977), which advocates for a comprehensive approach to understanding health by considering the interconnectedness of physical health, mental states, and social environments. Proponents of this model suggest that interventions have greater impact on a person's wellbeing when interventions extend beyond the physical body (i.e., biological) and also incorporate or impact psychological and social outcomes (Wade & Halligan, 2017). This is the case with yoga as it can impact physiological and psychological outcomes concurrently (Price et al., 2023a), and it can be practiced in many ways, such as in group classes. Ross et al. (2014) offer support for the purported tenets of the biopsychosocial model. In a study exploring the influence of yoga on interpersonal interactions among a sample of 171 men and women from the general population, the authors found yoga practice led to personal transformation, increased social interaction, provided coping mechanisms to weather relationship losses and difficulties, and led to spiritual transcendence. These results support the model's applicability in exploring how yoga can positively influence psychological and social outcomes. As such, yoga–an embodying physical activity–might lead to personal transformations that may support more body appreciation and positive social interactions in adults who have completed gynecologic cancer treatment.

1.2. The current study

Gynecologic cancer treatment results in immediate and late appearing changes to body appearance and functionality, potentially impacting interactions with others (sexual or platonic). To better understand the impact of gynecologic cancer on adults, it is important to investigate the different aspects of body image (e.g., negative *and* positive body image, appearance *and* functionality), and explore the impact of yoga in the real-world. Thus, the purpose of this qualitative study was to: (1) explore the thoughts, feelings, attitudes, and perceptions of adults who have completed gynecologic cancer treatment on their body

(appearance and functionality), and (2) explore how they perceive yoga to affect their thoughts, feelings, attitudes, and perceptions of their body. To do so, this study comprised two semi-structured interviews and the completion of a 30-day journal pertaining to the participants' yoga practice, body image, and interactions with others.

2. Methods

2.1. Study design

Study details are reported following the Standards for Reporting Qualitative Research guidelines (O'Brien et al., 2014). A phenomenological research design was used for this study, which was approached from a social constructivism paradigm, adopted a relativist ontology and transactional epistemology, and followed a hermeneutical methodology (Lincoln et al., 2011). Accordingly, the authors' stance is that there are multiple realities in the world, generalizations are partial, conditional, and situated in the context for which they occur. Taking this into account, the authors chose methods that allowed participants to activate their voices and express their realities.

2.2. Research team

The research team consisted of JP, a PhD candidate in her late-20's, a qualitative research trainee in physical activity and health promotion, and a certified vinyasa yoga instructor and JB, a Full Professor in the Human Kinetics department in her early-40's who has experience conducting qualitative research to understand people's suffering and thriving after cancer diagnosis and treatment. Both authors are White, have no physical disabilities, and have never been diagnosed with cancer, though both authors have had several close family members experience cancer. They collaborated to develop the study materials (e.g., interview guide) and elaborate initial concepts to investigate, which evolved based on participants' responses, as well as to analyse, interpret, and report the data. They continuously acknowledged and reflected on their preconceptions, life experiences, and knowledge as they collected and interpreted the data.

2.3. Participants

Participants were recruited across Canada from July to October 2021 through: (1) referral via The Ottawa Hospital staff, and (2) self-referral via letter mailouts to consenting patients at The Ottawa Hospital, recruitment posters distributed around Ottawa (Ontario, Canada), and postings on social media. Eligible adults were: $\geq$ 18 years, diagnosed with a non-metastatic gynecologic cancer, free of cancer, practice yoga more than once a week during a typical month, and able to read/understand English. In line with recommendations for interpretative phenomenological analysis (Eatough & Smith, 2017), recruitment ceased when 15 participants had completed one interview because there was redundancy in the experiences being shared.

2.4. Procedures

The Ottawa Hospital (file number: 20210260–01 H) and the University of Ottawa (file number: H-06–21-7167) ethics committees approved the protocol for this study. Self-referred individuals (n = 32) contacted JP or were contacted by JP if staff referred (n = 3), were screened for eligibility by phone, and were provided with detailed information about the study. During the call, eligible individuals provided verbal consent and had their first interview scheduled. Participants were emailed a link to SurveyMonkey (a secure online survey platform) 48 h before their interview containing a brief sociodemographic questionnaire and were asked to complete it prior to their interview. Then, participants were interviewed. The morning following their interview, they were emailed a link to access their 30-day journal online, which was housed on SurveyMonkey. Every seven days, JP emailed participants to prompt/remind them to complete their journal. One week prior to the conclusion of the 30-day online journal, participants were emailed to schedule their second interview within two weeks of completing the 30-day period (regardless of journal completion rate).

2.5. Data collection

2.5.1. Sociodemographic questionnaire

Participants self-reported personal (i.e., age, self-identified gender, annual household income, education attainment, school/work status) and medical information (i.e., cancer diagnosis and stage, treatment protocol, time since treatment, co-morbid conditions). These data were used to describe the sample.

2.5.2. Interviews

Two semi-structured interviews were conducted to: (1) develop a rapport with participants to help them feel a sense of safety while sharing potentially emotionally laden topics, (2) allow for follow-up of content from interview one, and (3) enable either party to clarify any potentially confusing elements from interview one (Knox & Burkard, 2009). Audio-recorded interviews were conducted by JP via teleconferencing technology (n = 17) or by phone for those who did not wish to use teleconferencing technology (n = 12).[1] The initial interview guides were developed by both authors and featured exploratory questions that broadly reflected topics published in the literature (Cash & Pruzinsky, 1990; Menzel & Levine, 2011; Piran & Teall, 2012), probed gaps aligned with the research questions, and were structured based on guidelines for interpretative phenomenological analysis studies (Eatough & Smith, 2017; Ravn, 2016). However, consistent with interpretative phenomenological analysis (Eatough & Smith, 2017), JP attempted to approach each interview as independent from any others, using the interview guide as a 'guide' to content, but allowing the conversation to flow naturally. As well, she transcribed interviews, read each transcript several times to achieve a broad understanding of participants' experiences, and used this information to develop probes for interview two. She also drew on each participant's journal entries to form probes pertaining to their yoga practice behaviours (i.e., frequency, location, timing, medium of instruction); thus, interview guides evolved over time to reflect each participant's responses. Moreover, given the flexibility of interpretative phenomenological analysis (Eatough & Smith, 2017), participants were encouraged to deviate from the interview guide questions as they wished and discuss experiences that had significant meaning for them.

For interview one, questions were focused on: (1) participants' value and attitude towards their body appearance and functionality, (2) their sexual and emotional relationships with others, and (3) how they perceive yoga to affect their thoughts, feelings, and perceptions towards their body and interactions with others. Interview one lasted, on average, 80 min (range=50–110 min). For interview two, questions (informed by interview one responses, journal entries, and the literature) focused on: (1) their yoga experience over the 30-days, (2) how components of yoga shaped their thoughts, feelings, and perceptions of their body and interactions with others, and (3) value and meaning of yoga to them. Interview two lasted, on average, 65 min (range=40–100 min). See Appendix A for the initial interview guides.

2.5.3. Journal

Participants completed a 30-day journal to: (1) facilitate reflections between interviews one and two, (2) gain additional insight into their current yoga practices, and (3) add breadth and depth to the analyses of

[1] One participant dropped out before completing the second interview (reason: unknown). As they did not request to have their data withdrawn, data from their first interview were analyzed for this study.

interviews by triangulating data to explore nuances, discrepancies, and contradictions in the interview findings (Flick, 2018). Whereas retrospective accounts during interviews are valuable to understand participants' overall perspective of their relationship with their body and role of yoga in their life, it is important to recognize that yoga practice is dynamic; it ebbs and flows over time, which presents challenges if only relying on retrospective accounts. Journals were deemed important to investigate dynamic patterns and possibly understand setting- or context-specific information that could be forgotten. Following an event-based response protocol (Bolger et al., 2003), participants were asked to write in an online journal after every yoga practice for a 30-day period. A structured journal was set up in SurveyMonkey and contained closed- and open-ended questions to encourage reflections on: (1) yoga characteristics (closed-ended), (2) general thoughts and feelings before and after yoga (open-ended), (3) body-related thoughts and feelings before and after yoga (open-ended), (4) additional behaviours undertaken during the week to address thoughts and feelings towards their body (open-ended), and (5) interactions with partner (if any) and others (open-ended). A total of 122 completed journal entries were submitted, with participants submitting an average of eight journal entries (range=2–27). See Appendix B for the journal prompts.

2.6. Data analysis

Descriptive statistics were estimated for quantitative data in Microsoft Excel. Interview transcripts and open-ended responses from journal entries were deidentified and imported into NVivo, matched using participant number identifiers, and analysed following recommendations for interpretative phenomenological analysis (Smith & Osborn, 2008). JP was primarily responsible for examining and interpreting the data and engaged in the meaning making process with JB. The data analysis was conducted in a structured, four-stage approach to ensure all data contributed to the findings, yet was inherently iterative, allowing for ongoing refinement and validation at each juncture. In *stage one*, JP read the first participant's transcript, paying particular attention to semantic content, language use, and explanations. In-depth reading and initial notes were used to produce a comprehensive and detailed set of notes that provided descriptive comments (e.g., keywords, phrases, explanations), linguistic comments (e.g., metaphors used), and conceptual comments (e.g., interpretations of participant's life experiences). Then, JP used these notes to develop emergent themes (i.e., initial patterns in the data). After, she mapped interrelationships, connections, and patterns between emergent themes and grouped similar emerging themes into superordinate themes (i.e., higher-level themes encompassing several emergent themes) in Microsoft Excel (to provide a visual audit trail). JP repeated the above steps for the remaining participants, flagging emergent themes that were recurrent (i.e., shared understandings), contrastive (i.e., varying understandings), and deviant (i.e., contradictive understandings). For *stage two*, JP analysed participants' journal entries. Due to the structured, but open-ended nature of journal entries (Smith-Sullivan, 2008), a categorization matrix was created based on existing literature and the research objectives. Then, responses were coded based on the prompt and whether they described negative or positive experiences. Next, similar codes were combined to form emergent themes. For *stage three*, JP repeated the stage one steps for interview two transcripts. For *stage four,* the superordinate themes from the interviews and journal entries were compared to explore similarities and consistencies between participants, highlight instances of marked discrepancies, contradictions, and polarity (when they occurred), to establish main themes (i.e., overarching themes that represent the core insights of the data), and the most articulate or powerful quotations within each theme were chosen for purposes of illustration. Quotations are presented with participant pseudonyms.

2.7. Trustworthiness

Several approaches were taken to establish trustworthiness of the data and findings (Nowell et al., 2017; Smith & McGannon, 2018). First, the interviewer (JP) attempted to suspend her existing knowledge and experience to see the world as experienced by participants during the interview. She has interests in yoga, body image, sexual health, and oncology, and this likely influenced the interpretative level of the analysis, which is encouraged by interpretative phenomenological analysis methodology. Second, the second author (JB) read the findings of JP's analysis at different stages and acted as a 'critical friend' to help JP (re)assess, (re)interpret, and refine themes. They engaged in a critical discussion to understand alternative interpretations of the data and come to mutual agreement of main themes and superordinate themes. Third, JP built rapport with participants to allow participants to openly disclose their experiences and perspectives. Fourth, transferability and dependability of the findings was enhanced by providing detailed descriptions of participants and their experiences, as well as the research team and study methods. Last, the current study's innovative use of both interviews and journals elicited rich dialogues and accounts, permitting insights into participants' experiences, and in turn sharing of their words to enhance confirmability of the findings.

3. Results

Participants were 15 (self-identified) women who had completed treatment for a gynecologic cancer who were, on average, 50.1 ± 13.5 years of age (range=28–66) and diagnosed 2.9 ± 3.05 years prior to the study (range=0.25–11). Participants were diagnosed with cervical (n = 6), endometrial/uterine (n = 5), ovarian (n = 2), and vaginal (n = 1) cancers, and one participant did not report type. Most were diagnosed with stage I cancer (n = 8, 53.3%), married or in a common law relationship (n = 10, 66.7%), had at least a tertiary education (i.e., college, university, graduate school; n = 11, 73.3%), worked full-time (n = 8, 53.3%), and seven (46.7%) had more than 1 child. Table 1 presents a summary of participants' yoga practices during the 30-day journaling period.

Participants' responses and the authors' interpretations from the two interviews and 30-day journal formed four main themes that concern participants' relationships with their body and the influence of yoga on their relationship with their body. In the next section, the focus is first on each theme: (1) the internal monologue of the changed body (interview 1), (2) the balancing act between acceptance and improvement (interview 1), (3) the value of taking time to prioritize oneself by practicing yoga (interview 2), and (4) the transformative catalysts of expectation and mindset on body-related self-perceptions during yoga (journals). It then considers how these themes relate to one another and collectively tell a story.

3.1. The internal monologue of the changed body

The data from interview one captured the cognitive and affective dimensions of participants' relationship with their body, highlighting how the changes to their body functionality, body appearance, and sexual health impacted their view of themselves and others. Participants were unanimous in noting that their body functionality (i.e., reduced strength and stamina), appearance (i.e., weight gain, abnormal hair growth, scars), and sexual health (i.e., reduced lubrication, vaginal stenosis, reduced desire/interest, urinary incontinency) had substantially changed. They talked about how this influenced their thoughts and feelings towards their body. For some, reduced functionality had more impact on their relationship with their body than their physical appearance because it caused greater disruption to their life, as Sandra (28 years) explained:

I couldn't walk upstairs. Like my legs would just give out […]. So that's why I don't care if I have scars. I don't care if those things occur,

Table 1
Summary of yoga practices as reported in the online journal ($N = 122$ entries).

Characteristic	*n*	(%)
Yoga style		
Hatha, Vinyasa, and Power	25	(20.66)
Yin	24	(19.83)
Vinyasa	22	(18.18)
Restorative	8	(6.61)
Hatha	4	(3.31)
Chair	4	(3.31)
Yesudian	4	(3.31)
Power/exercise	3	(2.48)
Yin and Hatha	2	(1.65)
Breathwork	1	(0.83)
Meditation	1	(0.83)
Other (e.g., flexibility, core, Barre)	3	(2.48)
I do not know	21	(17.36)
Length of practice session		
<29 mins	105	(86.78)
30-45 mins	68	(56.20)
46-60 mins	4	(3.31)
> 61 mins	6	(4.96)
Location of practice		
Home	114	(94.21)
Gym	2	(1.65)
Someone else's home	2	(1.65)
Studio	1	(0.83)
Swimming pool	1	(0.83)
No response	1	(0.83)
Medium of instruction		
Did not use a guide	49	(40.50)
A mobile app	31	(25.62)
A YouTube video	19	(15.70)
An instructor	10	(8.26)
Online synchronous (e.g., Zoom)	5	(4.13)
A website	5	(4.13)
No response	2	(1.65)
Time of practice		
Early morning (before 9 am)	32	(26.45)
Morning (9 am-12 pm)	28	(23.14)
Afternoon (12-4 pm)	21	(17.36)
Evening (4-7 pm)	20	(16.53)
Night (after 7 pm)	18	(14.88)
No response	2	(1.65)
Reasons for practicing		
General wellness	32	(26.45)
To gain/increase flexibility	32	(26.45)
Multiple reasons	31	(25.62)
Stress management	8	(6.61)
Physical exercise	7	(5.79)
To gain clarity and/or focus	4	(3.31)
To manage or treat a health condition	3	(2.48)
A spiritual activity	2	(1.65)
No response	2	(1.65)

but like I would really like to have the baseline functionality of being able to walk upstairs, being able to walk and do those things which I didn't really have for a long period of time.

This can also be seen in Carol's (56 years) talk about her self-criticism: "Any kind of self-criticism I have is really around the functionality more than the appearance." However, profound sadness towards changed appearance was also a recurrent theme, as can been seen from Tina's (32 years) quotation:

I thought I have a nice-looking body and I was really fit going into the surgery. And now, it's like it [my body] was sutured down to my body raw. So now, it's like an intense struggle looking at that. So, I think of like how flat and nice it was beforehand and then kind of looking at, a little bit of weight that came from just not being able to do that [physical activity]. I would say I probably miss my old appearance for sure.

As well, it was obvious in the words they used and in their discussions that changes to sexual health and functioning could cause fear, sadness, doubt, or grief over what had been lost, as Carol (56 years) shared:

It [sex] was so painful, it felt like my skin was burned on my insides. So, imagine something scraping against that it was just really, really painful and shockingly painful. I was worried and fearful that it would always be that painful.

This was a challenging experience for many and made it difficult to accept the new reality of their sex lives.

There were several factors that seemed to influence the degree to which participants were concerned about the changes they experienced to their body. The first factor was how they appraised their changed body and suggests that finding oneself worse off in comparison to before treatment made them feel worse about their body. Carol (56 years), who considered her previous self very active for both work and leisure, shared: "It's really about the fact that I can't move like I want to, I'm not as quick, I have pain when I move. […] I am much more, recently anyway, more aware of my functionality because it's harder." The second factor was how their changed body could evoke self-conscious feelings which made it more likely that participants would feel worse about their body. Linda's (50 years) excerpt demonstrates this: "I'm very conscious of the fact that I weigh more now than I ever have. So, I think that is always kind of in the back of my mind." The third factor was how participants viewed the role of appearance in their life. While participants were in-tune with the state of their body, there were a number of instances where participants used language and stories to show appearance was not always a key component of their identity. For instance, Teresa (65 years) explained that learning "a long time ago that I was never ever going to be beautiful by any stretch of the imagination" provided a useful opportunity to re-prioritize what was important "so appearance to me didn't mean a lot. And appearance for friends doesn't mean a lot to me either." This said, she had clearly been impacted by her changed body, which perhaps says that her body appearance still meant something to her. She discussed a very difficult situation of how she was emotionally affected by her changed appearance:

I got up one morning and I looked in the mirror and I said, 'you're ugly.' I burst into tears and I was looking all around the room and going what the heck just happened here? I mean it was so not me. I couldn't believe that. I think that day was the most negative I've ever had about me. About my body.

Many participants discussed that changes to their sexual health changed how they think about their sexual self or identity as a "sexual being". Notably, they experienced a diminished ability to engage in sexual acts and derive pleasure from those acts. Carol (56 years) explained that her changed body had completely disrupted her sexual patterns and beliefs, and that she now experiences anxiety about her sexual activities:

My sexual pattern was desire, motivation, and then intimacy where now it's motivation, desire, then intimacy. And that's not as powerful as it was. So certainly, I have negative thoughts. I have those 'why isn't my body functioning like it once did' and 'what does it even look like?' So, I definitely have heightened anxiety now with sex. […] So, on top of the physical piece of sex, there's the psychological - 'can I do it? How much pain am I going to have? Can I still have an orgasm? Can I please my husband?' So definitely I have this awareness of my body and its functionality in a way that wasn't present prior to cancer.

Moreover, many participants recognized that their decreased sexual functioning led to deep concerns about their ability to maintain relationships with their partner, and in some cases, intrusive thoughts. The concerns and intrusive thoughts were based on the belief that their partner would be dissatisfied that things were different from the way they were. As Kathleen (62 years) shared:

I think there's an expectation that things should be okay again and back to where they were, or some resemblance of what they were from a physical relationship point of view. And they're not. So, you worry […] that your partner is going to leave or have an affair because you're not engaged in the same degree of intimacy that you were previously and more than that, you don't care about it [sex]. Except for the fact that you're worried about the stability of the relationship.

Whilst participants had become accustomed to having negative

thoughts and feelings about their body, they highlighted the value and impact of several sources on their internal monologue and their relationship with their changed body. Sandra (28 years) felt that physical activity helped her move past negative thoughts and feelings about her body by enjoying a more positive outlook, improving her physical functioning, and enhancing her mental state:

Once I started feeling better about myself, once I started being able to walk, everything got a lot better after that. I was able to actually do some physical activity, so then I was in a better mental state. So, then I had a happier outlook. So, then I felt better about myself, and it was kind of like that cycle.

Life experiences such as pregnancy/ies, menopause, or aging also influenced how participants responded to the changes to their body. Although some recognized that it helped them cope as they already had experience to draw from, for others, this seemed to further contribute to negative self-perceptions. Indeed, the changes to their body triggered previous unresolved concerns and made them more self-conscious and cautious about their health behaviours. Nancy (53 years) reflected:

I would say probably 20 years ago if you'd have asked me that question, I probably would have said I don't worry about it [appearance] and I'm not bothered. But then I was skinny, young, and didn't feel I needed to really look after myself. I could eat what I wanted and not worry about it. But now, having gone through menopause, my body spreading, I can't eat what I want as I put on weight […]. I would say I am more conscious about how I look now than I ever was.

In addition, participants recognized that being in a committed relationship could ease concerns, explaining that communication, relationship security, and positive affective responses by a partner could offer reassurance. For example, Carol (56 years) shared:

My husband will not get a queen size or king size mattress because he says 'if we do that, I won't find you in the bed, I need to touch you, I need to know that you're there,' so that intimacy I think helps, it's reinforcing that my partner wants to be close to me physically.

Finally, participants also highlighted that society was slowly shifting its perspective on the importance of having the ideal body and found that this allowed them to value other personal traits. Teresa (65 years) reflected: "For me, appearance is not everything. I prefer somebody who's got a heart of gold then somebody who looks fantastic and thankfully, now they're starting to have models that look actually like humans."

3.2. The balancing act between acceptance and improvement

The data from interview one captured the perceptual and attitudinal dimensions of participants' relationship with their body, manifested as an internal debate between accepting their new body and trying to improve it. The way in which participants perceived and valued their body functionality, body appearance, and sexual health shaped their attitudes, beliefs, and behaviours towards their body and others. The balance between acceptance and improvement could be swayed one direction or another based on recent and/or long(er)-term intrapersonal and interpersonal factors related to their functionality, appearance, and sexual health. Participants felt their body functionality was paramount to their day-to-day lives because it allowed them to improve their appearance, maintain or improve their mental and physical health, and participate in enjoyable activities (e.g., hiking). Their motivation to improve their body functionality was heightened when their perceptions of the visible elements of their body (e.g., muscle tone, fat) and their ability to complete physical tasks (e.g., cleaning, walking, strength training) fell short of where they wanted it to be. Nancy (53 years) highlighted that single moments could trigger negative judgements about her functionality: "If I go for a walk and I get out of breath and I'm really struggling with this walk uphill – it will trigger me." While Teresa (65 years) shared that she was striving to improve her functionality because she felt her body was not meeting her expectations:

It's capable of a lot more than it is doing right now. I'm working on improving it. I want to be able to go for those long walks when we're traveling. I want to be able to get up and down the stairs without huffing and puffing.

However, other participants were more appreciative of their body and its capabilities, especially when they felt they were in a better physical state than others. As Mary (34 years) shared:

I look at my functionality as something really good because I look at other people my age and see that some people aren't able to do any type of activity and they struggle just to walk down the hall or play with their kids and so I positively know that I can do lots of really good things.

The value of appearance was much more variable – while some participants felt it was moderately important to them and their day-to-day life, others were indifferent or even found it to be inconsequential. Thus, the degree to which they accepted or desired to improve their appearance was dependent on their body insecurities, the opinions and perceived perceptions of others, and their self-evaluation and mood. They considered that improving their appearance – making reference to improving physical fitness as a means to do so – would improve how they felt about themselves. Tammy (66 years) demonstrated this interaction:

I feel that if I can get myself fit, I will look better, so I guess to answer your question, it's more important to get fit because I think how I look and feel about myself will come or will be more positive.

Others, however, accepted their appearance and made no overt attempts to change their appearance. Here, Tina (32 years) explained that feeling comfortable with her partner helped her accept her physical appearance:

I guess now just, growing up and being with my spouse for so long, we've kind of accepted each other and love each other, not have to worry about if we gained a couple pounds or how we look underneath our t-shirts and so on.

Participants also noted that the importance of their sexual health and functioning on their day-to-day life was dependent on how their treatment disrupted their sexual health. Therefore, the degree of difficulty that some experienced as a result of more extensive treatment, longer healing time after treatment, complications caused by treatment, and loss of physical functioning leading to pain during intercourse, reduced pleasure or ability to climax, and a loss of interest/desire in sex made acceptance hard. The balancing act between acceptance and improvement was exacerbated by the acknowledgement that they wanted to improve this element of their life but did not necessarily have the bandwidth to deal with it, as Kathleen (62 years) stated:

Well, it causes stress and anxiety pretty much daily I would say, you're worried about it. I don't know how to fix it. It's an issue. If you don't address it, you're just putting your head in the sand, but I already have enough issues to deal with and I don't want to deal with it, but it's a big one.

In addition, participants were of divergent views about the impact of their romantic relationship on their acceptance of their body. Some participants shared that having a partner that was understanding, patient, and compassionate made it easier to accept their new sexual body. Regardless of the benefit that some found from being in a relationship, participants described how having a partner that was apathetic or non-compassionate would lead to anger along with a desire to improve their sexual functioning. As Carol (56 years) explained, her partner's apathy towards her pleasure caused her to feel anger towards her partner:

It wasn't as easy to orgasm, it wasn't as big, and he [husband] wasn't understanding. He's okay with continuing as we are, and I can't. […] So, there is some anger I have towards him for not wanting to change. It would be me forcing the change and I would like for him to engage in the change, but I can't see that happening.

When discussing their cancer experiences, participants were able to hold space for both acceptance and a desire for improvement, although it was often emotionally difficult to do so, as Tammy (66 years) explained:

I think with the size of my belly, I can get depressed about it and

anxious. My attitude, it's not acceptable. […] There is some tolerance given what my body is going through right now and that it's attempting to heal, and so I don't want to stress it out. But on the other hand, there is that intolerance, impatience with not being able to get it into shape.

As participants came to terms with their body, their beliefs and experiences evolved as did their ability to accept their body. Mary (34 years) shared that her relationship with her body required time to recover after treatment:

If you would have asked me right after [surgery], then no. I had a really difficult time. But now two years later, yeah, I have a really good relationship with my body and what it looks like and how it functions.

3.3. The value of taking time to prioritize oneself by practicing yoga

The data from interview two captured the overarching role and value of yoga in participants' lives. Yoga supports their physical and psychological wellbeing by providing them with a space to engage in the type of practice they need to support their psychosocial wellbeing as well as providing motivation to continue to prioritize their needs after yoga. Participants considered yoga to be a core component of their everyday life because it was foundational for self-care and was part of several valuable behaviours (e.g., good nutrition, getting outdoors, connecting with others). Yoga allowed them to feel like they were prioritizing themselves. When participants practiced before and after their cancer experience, it was clear that yoga was significantly meaningful post-cancer. Participants expressed that yoga allowed them to continue to move their body while living with physical limitations that made other physical activities (e.g., weightlifting, cycling) more difficult. Sandra (28 years, cervical cancer) shared: "It signifies that a little portion of time that I carve out in a day to dedicate to being better, to bettering myself both emotionally and mentally. And I mean definitely physically now." This quote emphasizes that the real meaning of yoga is that it represented an opportunity to prioritize themselves daily and their desire for growth and wellness. Yoga helped participants create a deeper connection to the world around them and see the "bigger picture", which allowed them to recentre and (re)discover priorities. For instance, Michelle (31 years) explained:

Yoga, in a way, is about becoming more in tune with that overall energy and I definitely do feel more connected to the earth, nature, and more compassionate in general. And I guess those are goals of spirituality, regardless of whether you follow religion or spirituality, compassion and happiness are kind of the goals of most people. […] Yoga kind of facilitates that feeling of connection to something beyond the here and now, even though it is very much about the here and now.

Prior to yoga, participants shared feeling tired, frustrated at their low energy, stiff, overwhelmed, and unable to concentrate. Practicing yoga yielded several physical improvements, including fewer aches, improved sleep, increased strength, improved digestion, improved pelvic floor health, and settling of restless energy. Cynthia (59 years) highlighted:

I'm feeling a whole lot stronger than I had been when I finished my treatment in January. I started into some yoga therapy, then I was able to build it to be able to go to a yoga class. But I think, *I know*, I'm getting better.

Notably, practicing yoga yielded more noticeable psychosocial improvements. Yoga represented a time and space to take care of themselves and cultivate a deeper self-awareness. This self-awareness helped participants shape their practice to meet their psychosocial needs on a given day. Two main types of practices emerged: mental distraction or introspection. When participants used their yoga practice to provide a distraction the intention was to clear their mind and stabilize their thoughts (i.e., stop racing thoughts). Practicing more physically demanding asanas required them to detach from their thoughts and feelings to focus on their body and less on their state of mind. Michelle (31 years) explained:

When I'm getting my heart rate a little bit up, like doing quicker sun salutations or holding like a plank, something that has a bit of physical challenge to it, I will often find that those moments are really good at bringing me out of racing thoughts.

At other times, participants used their yoga practice for introspection because they needed an outlet to delve into and work through a stressful situation or negative states of mind. For some, this type of practice was facilitated by a slower paced practice focused on being more intentional in their movements, breath, and meditation. Giving themselves time and space to process helped participants let go of consuming thoughts and feelings leaving them feeling more at ease and content. Laura (38 years) shared that sitting without distraction was important:

I think so much of that [non-attachment to feelings] came from sitting in the quiet that I get from yoga, when I'm on my mat and sitting in quiet. We so often fill our space with noise and clutter and distractions.

The benefits participants experienced (e.g., feeling calm, relaxed, more positive state of mind) translated to being less negative with others, thus allowing them to be able to better connect with others. They felt more patient, compassionate, and capable of slower, more intimate interactions that left them feeling more positive towards the state of their body, the state of their mind, and importantly in their relationship with others. This is illustrated by Sharon (62 years): "It's dumb, but I find if I don't do yoga, I feel myself getting a little bit moody. I find yoga brings me back to being, I guess, nice to people. So, it just makes me accept my environment better." Overall, participants believed yoga facilitated more intentionality, helped switch off their fight or flight response, and led to more positive interactions with others. In addition, yoga helped participants regulate their engagement in other self-care behaviours. After yoga, Laura (38 years) experienced a sense of calm and clarity, which offered her a good state of mind to journal: "I would journal because like with that sitting in quiet, things came to me that I felt needed to be reflected on. So, that's fairly common to journal after my practice." Others drew on how they felt after yoga to motivate themselves; that is, they made use of their energy to concentrate on work or accomplish tasks that needed to be completed, as Nancy (53 years) explained:

As soon as I've done yoga, 'Okay, breakfast and straight into my list of jobs.' If I don't do that, I know I won't start my day, I need to use that energy that I've picked up from the yoga immediately.

In addition, participants valuation of self-care was influenced by the tenets (or teachings) delivered by instructors that emphasised meeting the body where it is, giving room for self-exploration, focusing on the self as opposed to others, acceptance, and openness. As Cynthia (59 years) explained, this mentality motivated her to continue to take care of herself outside of yoga:

I find in my regular daily life it stays in my head, so it provides me with more motivation to look after myself in other ways, like what I'm eating and what I'm doing around the physical functioning of my body and what I'm doing around my emotions and again, looking at some of the self-care.

3.4. The transformative catalysts of expectation and mindset on body-related self-perceptions after yoga

The data from participants' journals captures the variability in experiences that yoga can evoke among participants. Individual yoga practices could foster either positive, reproachful, or conflicting self-perceptions, depending on their expectations and mindset for their practice and themselves. Notably, these self-perceptions did not stay self-contained but could influence their behaviours and interactions with others. Prior to yoga, a general pattern observed was that participants shared thoughts that admonished their physical appearance and criticized their perceived shortcomings, including slow healing and reduced mobility. For instance, Cynthia (59 years) shared that her physical appearance bothered her: "I didn't like looking at my jiggly thighs in the mirror when getting ready for yoga." Similarly, Michelle

(31 years) stated: "I was thinking I was getting old and can't keep up like I used to." After yoga, a general pattern was that participants reflections on their bodies were often kinder and more appreciative of their functionality and body's capabilities (e.g., ability to move, flexibility). Barbara (66 years) reflected on her changed outlook towards herself that encompassed her gratitude and pride towards her body after her yoga practice: "I felt grateful for having a body that carries me through life; that I have a strong, healthy, and beautiful body worth being proud of."

However, attention to divergent experiences revealed that yoga did not always lead to greater body functional appreciation. It seemed to depend on their expectations for their practice and themselves. After certain practices, participants did not report positive shifts in self-perceptions, rather they reported strong emotional responses towards their body including hopelessness, grief, and frustration, as highlighted by Carol (56 years) when she shared: "I feel hopeless; grieving the changes in my body due to radiation, […] frustration at my inability to focus." Indeed, participants' yoga practices were likely to foster reproachful self-perceptions when they placed expectations on themselves and their bodies' capabilities, such as not moving as well as they wanted them to and focusing on what they were able to do in their previous yoga practices. For instance, having to use a modification for a pose that they previously did not need one for could be disheartening and frustrating, as Tammy (66 years) described: "I think there's a momentary kind of frustration, 'why can't I do this,' but I think it's more about having to do a modification where in the past I haven't had to." However, participants' reproachful self-perceptions were limited to themselves and focused on comparison to themselves ranging from pre-cancer to the previous practice a week before, highlighting that the self-comparison was not time-bound.

In addition, yoga did not always lead to only positive or only negative self-perceptions; at times, participants held conflicting self-perceptions that were both positive and negative views of their body, as they distinguished between the different aspects. For example, Sandra (28 years) stated: "Today's practice reminded me of my body's limitations, so there is always a slight bit of sadness. But I also feel warm and invigorated, which makes me feel grateful that my body is still capable of healthy movement." When participants reflected on yoga practices that evoked negative emotional responses, an open mindset free of expectations buffered against the reproachful self-perceptions that could be triggered by reduced physical functioning because they were also experiencing gratitude and pride towards their body. Indeed, participants' self-reflections on these practices revealed that they viewed that particular practice as an opportunity to care for and support themselves and their body as opposed to reducing physical limitations. This mindset was often supported by instructors; participants valued when an instructor taught from a place of acceptance. Specifically, when instructors encouraged participants to listen to their bodies and not fight against their bodies but instead seek to make themselves comfortable and notice the changes that help and hinder. Laura (38 years) shared:

They just give that awareness that you're listening to your body, and it doesn't have to be a struggle, you don't have to be fighting it if you're not comfortable. It's not even about being not comfortable, it's about trusting that it could just be better.

These types of messaging helped participants to feel in control of their bodies and supported in the idea that a yoga practice is their own to build and take what they need from the practice.

Moreover, the self-perceptions fostered during their yoga practice had the potential to impact interactions with sexual partners after the practice. When participants experienced a yoga practice that led to positive self-perceptions, including gratitude and pride towards themselves and their bodies, they felt it also contributed to interacting with others in an open, self-assured manner, and positive emotional responses and self-perceptions during other activities. For instance, Sandra (28 years) reflected that she had an enjoyable sexual experience with her partner because she felt confident in her body after a yoga practice that had highlighted her physical competence:

I thought that my body was finally working for me, and I felt good about my body, […] I had some really great sex, I felt quite confident in my body. I didn't fixate on my stomach or scars and was able to fully enjoy myself.

However, when participants' yoga practices lead to reproachful self-perceptions and self-criticism that highlighted their perceived physical inadequacies (e.g., more fat in the abdominal area than before treatment), they also shared concerns about how others perceived them after their practice. Cynthia (59 years) shared: "During yoga I had a fleeting thought about how large my stomach had become. I noticed when I was doing an exercise when I had my hands on my hips and bending over," she was self-conscious and anxious about her partner's behaviours: "My husband was in our bedroom when I was undressing, and he was not looking straight at me. I wondered for a fleeting moment 'why?' He usually is quite interested when I am undressing."

3.5. Overarching narrative

Gynecologic cancer and its treatment had a tremendous impact on participants' body functionality, body appearance, and sexual health. As a result, participants felt they had a body that no longer resembled or functioned the way it used to. These changes prompted an internal monologue that highlighted the flaws and limitations of their body. The level of negativity of their internal monologue dictated whether their attitudes and self-perceptions swayed more toward acceptance or wanting to improve their body. Participants often found themselves balancing acceptance and improvement wishes based on the value they placed on their appearance, functionality, and sexual functioning. Romantic relationships also played a role, with understanding partners facilitating acceptance, while apathetic partners generated a desire for change. Over time, participants' beliefs evolved, leading to greater body acceptance.

In terms of yoga, it represented a space for participants to focus on and prioritize themselves to improve their body while also finding acceptance. However, yoga was not a guaranteed method for bolstering positive self-perceptions as practices could highlight the ways in which participants' bodies had changed. Focusing on the limitations of the body or only seeking to improve the body's functionality led to reproachful self-perceptions when participants were not able to meet their own expectations. Whereas having an open mindset and practicing gratitude and self-compassion for one's self could bolster against reproachful self-perceptions, even when a practice did not go the way a participant wanted.

4. Discussion

An in-depth qualitative study focusing exclusively on the experiences of adults who have completed gynecologic cancer treatment, targeting self-selected yoga practice, and adopting a phenomenological approach is lacking in the literature (Price et al., 2023a); yet, is needed because it provides much-needed insight into the nuances of self-perceptions and the impact of holistic complementary therapies. The purpose of this study was to explore: (1) the thoughts, feelings, attitudes, and perceptions of adults who have completed gynecologic cancer treatment on their body (appearance and functionality), and (2) how they perceive yoga to affect their thoughts, feelings, attitudes, and perceptions of their body. Participants' accounts support the general consensus that gynecologic cancer takes a toll on the body (Kim et al., 2015; Rizzuto et al., 2021; Zandbergen et al., 2019), resulting in negative body image (Sekse et al., 2019). Participants' experiences emphasize that yoga can promote body acceptance and body image improvement or lead to body dissatisfaction and body image deterioration. Based on the findings of a recent qualitative meta-synthesis (Price et al., 2023a), there is only one other study (Archer et al., 2015) reporting qualitative findings exclusively exploring the experiences of adults who have completed gynecologic cancer treatment participation in yoga. Thus, this study's findings fill a

gap in the literature and provide relevant professionals, services, and policymakers with an understanding of the challenges adults experience after having completed gynecologic cancer treatment and the potential role of yoga in facilitating improved body image during survivorship.

The cognitive-behavioural perspectives on body image highlight the significant role of evaluation (i.e., cognitive and affective appraisal) and investment (i.e., cognitive, behavioural, and emotional importance) in body appearance and functionality (Cash, 2012). Yet, much of the research to date has focused on negative evaluation (i.e., body dissatisfaction; Cash & Smolak, 2011; Smolak & Cash, 2011; Tylka & Wood-Barcalow, 2015b) and appearance investment (Jarry et al., 2019). Findings from this study highlight that body investment can moderate the valence of evaluation. Among participants who were more invested in their body, appearance, body functionality, and/or sexual functioning were critical factors in their lives and could lead to more negatively-valenced evaluations. Moreover, findings suggest that among adults who have completed gynecologic cancer treatment, investment in body functionality, particularly their physical capabilities, may be as important as investment in body appearance. Previous research with adults diagnosed with breast cancer (Brunet et al., 2022) and participants' responses herein suggest heightened body investment is perhaps the result of significant changes to their physical capabilities, greater attention to the body's senses and sensations, and the associated impact on their ability to interact with the world around them (e.g., ability to complete necessary tasks, engage in pleasurable pursuits). However, as highlighted in Theme Four, the impact of body investment on evaluation may vary according to one's level of acceptance and compassion. While research in appearance investment has provided insight into the association of high appearance investment and higher body image dysfunction (Jarry et al., 2019), little research has sought to explore the contributors, associations, or variability of functionality investment. Moving forward, it is necessary to explore the nuances of functionality investment and evaluation, including the potential role of shifting investment from one area of body functionality (i.e., physical capabilities) to another (e.g., creative endeavours) and the impact of psychological processes (i.e., acceptance, compassion) to determine if and how they can contribute to positive and negative body image among clinical and non-clinical populations.

In line with extant literature (Sekse et al., 2019), participants expressed a predominance of internal, negatively valenced thoughts and feelings toward their changed body. However, similar to research exploring older women's experiences of aging (Bennett et al., 2017; Cameron et al., 2019), participants also expressed a reluctant acceptance of their changed bodies. This reluctant acceptance may have been bolstered by downward comparison and the sense of being "better off" than other real or imagined cancer survivors. The process of downward comparison has been shown to help women diagnosed with breast cancer reframe their understanding of their bodies within the larger context of survivorship, contributing to greater acceptance and reduced self-stigmatization (Corcoran et al., 2020). Moreover, participants identified another strategy for bolstering their positive body-related perceptions during their yoga practice – a compassionate and grateful mindset. This mindset is in line with acceptance and commitment therapy, which focuses on accepting thoughts and feelings as they are, rather than trying to change or avoid them, and committing to actions that align with personal values. Acceptance and commitment therapy has shown promising results in enhancing the psychological and emotional wellbeing of adults diagnosed with cancer (Li et al., 2021; Zhao et al., 2021). This is pertinent as it suggests that the participants' adoption of this type of mindset during yoga could similarly contribute to improved body-related perceptions and overall wellbeing. Overall, these findings support the notion that adults who have completed treatment for gynecologic cancer hold space for both negative and positive evaluations of their changed bodies, which has been reported among young adult cancer survivors (Wurz, Price, & Brunet, 2021) and provides evidence for construct differentiation (Tylka & Wood-Barcalow, 2015b). Therefore, an important first step to improving positive body image among adults who have completed gynecologic cancer treatment may be to encourage acknowledging changes and embracing the complex thoughts and feelings that come with a "changed body."

Several theories, models, and frameworks exist that shed light on factors that may shape a person's body image. Yet, many of these focus on the physical, interpersonal, and psychological influences on body image (Cash & Smolak, 2011; Smolak & Cash, 2011) and only tangentially on methods for coping with or actively changing body image. However, the embodiment model of positive body image proposes that engaging in embodying activities that promote competence, interpersonal relatedness, power, self-expression, and wellbeing can help a person experience their body as comfortable, trustworthy, and deserving of respect (Menzel & Levine, 2011). In line with this model, findings highlight that participants regarded yoga as an embodying activity that helped them shift their evaluation of their body image to be more positively valenced. As in previous studies with clinical and non-clinical populations (Jindani & Khalsa, 2015; Pizzanello, 2016; Villate, 2015), yoga was seen to foster a sense of agency and empowerment in relation to their bodies and contribute to positive self-perceptions. In addition, findings assert the merit of the biopsychosocial model (Engel, 1977) in aiding to understand the value of yoga in the interplay of physical health, mental wellbeing, and the social environment for improving the body image of adults who have completed gynecologic cancer treatment. Yoga aided in the restoration and recognition of the body's capabilities (biophysiological) and offered a reflective space for processing emotions and cultivating self-compassion for their bodies (psychological), helping them interact with others in an open, self-assured manner (social). These findings are in line with previous research on yoga interventions for adults diagnosed with cancer (see Price et al., 2023a for review), suggesting that self-selected yoga practice may facilitate similar outcomes.

A novel component of this study was participants ability to self-select their yoga practice with no influence from the research team. Participants in this study predominantly practiced yoga at home via an asynchronous video (e.g., YouTube), giving them access to numerous instructor-styles, types of practices, and the ability to end or change their practice as needed. Being able to engage in a yoga practice on their own terms (i.e., where, when, how they wanted) may be valuable for allowing participants to meet their present-moment needs, which could help enhance body functionality and promote body appreciation and acceptance overtime (Alleva & Tylka, 2021; Tylka & Wood-Barcalow, 2015b). Moreover, research suggests that the instructor is an influential component of yoga practice – they can shape the practice for better (e.g., encouraging a compassionate mindset; Price et al., 2023a, 2023b) or worse (e.g., shaming diverse body types or abilities; Cox et al., 2022). Despite being delivered asynchronously, participants shared that the instructors indirectly encouraged a positive body image by promoting teachings or tenets (yamas and niyamas) related to reduced self-judgment and acceptance of the body's needs. Given that participants were self-selecting their practice, this may indicate that participants chose (intentionally or not) instructors and videos that were positive body image supportive. However, this may be different for novice participants as they may be less comfortable self-adjusting their practice or seeking practices that meet their needs. The majority of yoga interventions offered to adults diagnosed with cancer to date do not include (or report including) yamas and niyamas (Price et al., 2023a); as such, there is little evidence testing their effectiveness or the most effective way to teach them. Therefore, it is necessary to determine what and how yogic teachings can influence body image and the role of the instructor in delivering such messaging.

Most studies to date have been focused on the positive impact of yoga on physical and psychological outcomes among adults diagnosed with breast cancer (Cramer et al., 2017; Price et al., 2023a). In this study, findings highlight that practicing yoga has the potential to foster both

positive and negative self-perceptions of the body among adults who have completed gynecologic cancer treatment, sometimes concurrently. This finding underscores the importance of considering idiographic experiences and responses that yoga can elicit in relation to body image. There are several study designs (e.g., n-of-1, single-subject/case, case study) that employ quantitative, qualitative or mixed-methods approaches to collect data, as well as analyses (e.g., hierarchical linear modelling, interpretative phenomenological analysis) that would allow for within-person experiences to be examined in greater depth. Moreover, as findings demonstrated, body image experiences vary temporally and in situational contexts; yet, most research has focused on body image as a cross-situational and stable trait among adults diagnosed with breast cancer and the general population (Brunet & Price, 2021; Cash et al., 2002). As such, employing only brief measures, only using positive or negative measures, creating global scores, and/or short interventions with no follow-up to assess changes might lead to conclusions that yoga interventions are not effective. More robust longitudinal study designs are required to track changes over time to identify temporal patterns and sequences of events. In addition, findings highlight that yoga is not a panacea that is divorced from the impact of investment and evaluation. Thus, there is value in exploring methods or means for aiding women to further reduce their negative body image and improve their positive body image within their yoga practices. It follows then that it is crucial to identify facilitators that can be modified to increase the likelihood of positive evaluations during yoga, as this population can experience heightened investment in functionality due to changes in their physical capabilities.

4.1. Strengths and limitations

The longitudinal study design coupled with interpretative phenomenological analysis is a strength as it allowed for the collection of in-depth retrospective and real-time data, which played a vital role in capturing the nuanced dynamics between yoga and self-perceptions. Retrospective data allowed participants to reflect on their experiences and perceptions over time, providing insights into the long-term impact of yoga practice on their body image. Real-time data collection from the journal provided a glimpse into the immediate effects and fluctuations in self-perceptions during and after yoga practice. Similarly, conclusions were drawn from multiple sources of data wherein participants had the opportunity to develop rapport with the first author and allowed for follow-up and clarification of content shared in interview one and the journals to build a more complete picture, adding layers of depth and credibility to the research findings. Finally, the breadth of age range (28–66 years) provides much needed insight into the value and impact of different facets of body image and sexual health across the life course.

It is important to note the limitations of the study. First, besides age, there was limited diversity in the sample, limiting the transferability of findings to White women with tertiary education who typically maintain a regular yoga practice. An important next step is to expand this line of inquiry to compare and contrast the experiences of adults with different backgrounds to understand how they may differ from those reported herein. Additionally, as experience (e.g., novice vs expert) and context (e.g., self-selected vs prescribed type and intensity of a yoga program/intervention) may be important factors impacting the outcomes of yoga, these should be explored in future research. Second, the topics addressed in this research are often considered private and can have stigma attached to them. While participants volunteered for this study, the data collected relies heavily on participants' willingness and ability to share. If participants were not entirely open or lacked introspection, it might have limited the depth of the findings. Drawing on Feminist (Beetham & Demetriades, 2007; Stanley & Wise, 2013) and Indigenous (Chilisa, 2019; Ryder et al., 2020) research approaches, depth of findings may be facilitated in future studies by supporting emotional safety through conscious rapport-building, cultural respect, participant collaboration, safe communication environments, reflective activities, iterative dialogues, and experience validation.

5. Conclusions

Findings from this study provide evidence for the impact of investment and evaluation on the relationship between the body and self-perceptions for adults who have completed gynecologic cancer treatment. This study also demonstrates that yoga can have both positive and negative effects on self-perceptions of the body. Engaging in yoga practice can provide opportunities for body empowerment and improvement, leading to positive self-perceptions. However, it is crucial to acknowledge that yoga is not a guaranteed path to positive self-perceptions, and it can also elicit negative self-perceptions when personal expectations are not met. Future research should further explore the individual differences and mechanisms underlying these varied responses to yoga practice to optimize the benefits and mitigate potential challenges in promoting positive self-perceptions and body image.

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Jennifer Brunet: Writing – review & editing, Supervision, Methodology, Conceptualization. **Jenson Price:** Writing – original draft, Visualization, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability

Data will be made available on request.

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Appendix A and B Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.bodyim.2024.101705.

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