Modifying physical selves
with reversal-theory framed expressive writing

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The aim of this study was to explore the use of reversal-theory framed expressive writing to modify middle-aged adults' and older adults' physical self-perceptions. Fifteen participants aged 57-89 years (mean = 72.5 ± 11.3 years) completed either six sessions of standard expressive writing (n = 7), or six sessions of reversal-theory framed expressive writing (n = 8), both focused on their physical self and health. Prior to and following this, all participants identified their hoped-for and feared future selves and after the writing sessions, were interviewed about the experience and its effects. Composite vignettes used to illustrate these experiences highlighted that both groups found the experience challenging and to varying degrees beneficial for raising awareness of their physical self. However, the use of different metamotivational states in the reversal-theory framed expressive writing group encouraged participants to look at themselves in hoped-for ways, generating new perspectives on aspects of their physical selves. Feared and hoped for selves did not change over the course of the writing but were characterized by an unexpected metamotivational richness. Participants' experiences of the reversal-theory framed expressive writing suggested that this is a feasible intervention for use with this population sub-group. Its potential to help modify physical self-perceptions and behaviors could be investigated further. This method also has potential for exploring lay theories of metamotivational states to unearth the mental ethologies of everyday metamotivational experiences (cf. Apter, 2013) and their implications for the individual's view of themselves and their behaviors.

Keywords: expressive writing, older adults, future selves, physical self, self-perception, physical activity, composite vignette

Introduction

The world's population is aging, with more people living longer lives, a global population trend that is projected to continue. In Europe and North America alone the current population of 200 million older adults (aged 65 years and above) is predicted to increase by 48% by 2050 (United Nations, Department of Economic and Social Affairs, Population Division, 2019). However, these additional lived years are not always lived in good health, potentially resulting in a poor quality of life. For instance, in Wales in the United Kingdom, although female life expectancy is 82.3 years and male life expectancy is 78.3 years, healthy life expectancy (years lived in good health) is, respectively, 62 and 62.4 years (Older People's Commissioner's State of the Nation Report, 2021).

Healthy aging has been defined as "the process of developing and maintaining the functional ability that enables wellbeing in older age" (World Health Organization, 2020) but perhaps more insightful are the perceptions of healthy aging held by older adults themselves. Song and Kong's

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(2015) meta-synthesis of 12 qualitative studies revealed that subjective perceptions of health were more important than objective measures, with five themes underpinning healthy aging: ability to do something independently; absence or management of symptoms; acceptance and adjustment with optimism; connectedness with others, and feeling enough energy.

Physical activity can contribute to healthy aging, helping to maintain physical and mental health. To illustrate, physical activity is associated with decreased risk of cardiovascular and metabolic diseases, improved cognition and reduced risk of falling, and higher quality of life (Earnest et al., 2013; Franco et al., 2014; Marquez et al., 2020). Conversely, physical inactivity is a major cause of poor physiological fitness and disease in older adults, with deleterious health implications equal to those of smoking, excessive alcohol consumption, and being obese (Booth et al., 2000; Lee et al., 2012).

However, physical activity levels decrease with age and older adults represent the least active population sub-group; for instance, in England, only 69% of 45-54 year olds meet the guidelines for physical activity (150 minutes of moderate intensity activity per week; Department of Health and Social Care, 2019), falling to 63% of 55-64 year olds, 60% of 65-74 year olds and 38% of 75-84 year olds (NHS Digital, 2023). Given these population trends, to help prevent the high levels of physical inactivity observed in older adults, it seems important to attempt to increase physical activity not just in older adults but also in individuals during middle-age, as once physical activity habits are established at this age, this increases the odds of being active in later life (Aggio et al., 2017).

Self-perceptions are influential determinants of physical activity at all ages (Whaley, 2004) and many older adults encounter numerous age-related changes in self-perceptions that have the potential to act as barriers to being physically active. These include intrapersonal factors such as lowered exercise self-efficacy (Lee et al., 2008), societal narratives of an aging process characterized by inevitable decline and decay (discussed in Phoenix & Griffin, 2013), and the interplay between the two in our acceptance of and identification with old age stereotypes that are perpetuated in society (Levy, 2009). In addition to our current self-perceptions our future, or possible, selves are proposed to impact on our current behavior (Dark-Freudeman et al., 2006). According to Markus and Nurius (1986), possible selves are cognitive representations of our goals, motives, fears and threats, as they incorporate both our hoped-for and our feared selves. The former reflect the person we would like to be, and the latter, the person we fear becoming, and both can be imagined across a range of life domains (e.g., physical, health, social, financial domains).

Demonstrating the role of possible selves in influencing current behavior, Whaley (2003) identified that the hoped-for and feared possible selves related to middle-aged women's body image effectively differentiated exercisers from non-exercisers. Given this, Whaley (2003) suggests that it might prove effective to include future selves in interventions aimed at changing behavior. However, research examining interventions to modify perceptions of aging remains sparse, thus further exploration is needed to understand how to reframe aging, including at the intrapersonal level (e.g., through imagined future selves; Hausknecht et al., 2020).

A widely-evidenced intervention that has been shown to affect a plethora of physical and psychological outcomes is expressive writing (e.g., Baikie & Wilhelm, 2005). In expressive writing, the individual writes continuously about a topic for 20 minutes on 4-6 separate but usually consecutive days, and they are asked to write without inhibition and to focus on their deepest thoughts and feelings related to the topic (Pennebaker, 1997). Moreover, a modified form of expressive writing, using reversal theory (Apter, 2013), has been shown to result in self-development and positive narrative shifts in athletes who used this form of expressive writing to write about experienced competitive stressors, including injury, being a substitute, and witnessing a severe sports injury (Hudson & Day, 2012).

Reversal-theory framed expressive writing makes use of the Eight Rooms Imagery Technique (Ellis, 2009; Hudson & Day, 2012) where the individual is guided through an imagery process during which they imagine walking through "eight rooms" representing their experiences of the telic, paratelic, negativistic, conformist, autic mastery, autic sympathy, alloic mastery and alloic sympathy metamotivational states. During this imagery process they incorporate sights, sounds, colors, tastes, smells, and feelings to furnish their room such that subsequently entering into this room in their mind stimulates an experience of the metamotivational state(s) it represents. Once the rooms are created, the individual follows instructions, in separate expressive writing sessions, to enter into specific rooms and then complete their expressive writing from the perspective of being in that metamotivational state, or states.

Expressive writing as originally conceived (hereafter, standard expressive writing) has been effectively used to support older adults in coping with loss, managing pain, and improving health symptoms (Caplan et al., 2005; Guinther et al., 2003; Consendine et al., 2012; Keefe et al., 2013). However, reversal-theory framed expressive writing has yet to be used with older adults and considering the sentiment expressed by Apter below, this approach to expressive writing might help older adults to reframe their physical self-perceptions and their physical future selves:

Structural phenomenology, "in the form of reversal theory... provides a more effective approach to helping people to change than approaches that start by saying, "This is how you are." Instead reversal theory says, "*There are many dif-*

Table 1

Initial and final expressive writing session instructions for reversal-theory framed expressive writing group and instructions for all standard expressive writing group sessions

During today's writing session, your task is to write about your deepest thoughts and feelings about yourself physically, including being physically active, your physical health, your physical abilities and your physical appearance. Please make sure you focus on how you feel right now. You could refer to things that are relevant and have happened previously but you must focus on thoughts and feelings you are experiencing now. What you write about in relation to this topic is up to you but it must be personally relevant to you. In your writing, the most important thing is that you really let go and explore your deepest emotions and thoughts. You may write about how these affect your experiences in life, your view of others, or of the world in general. You might tie your topic to your relationships with others, including co-workers, friends, family, or relatives, or different roles you have, who you are in general in different roles you have and as a person. The only rule about the writing task is that you are to write continuously, without stopping, for 20 minutes. Do not worry about spelling, grammar, or sentence structure. All of your writing will be completely confidential and will only be seen by the researchers in the study; if reported in research publications, your writing will remain anonymous. It is important for you to know that your name will not be connected in any way with your writing.

ferent ways you could be, let's help you to have access to all of them. Let's make life full of possibilities again." (Apter, 2013, p. 7; italicised text is ours)

Therefore, the aim of this study was to explore the feasibility and experience of a reversal-theory framed imagery- and expressive-writing intervention for modifying middle-aged and older adults' physical and physical activity-related possible selves, and subsequently, for increasing physical activity behavior. We focused on middle-aged and older adults, as physical activity habits established during middle-age are likely to be maintained during older adulthood (Aggio et al., 2017), hence, this is an important group of individuals to target. In addition, as expressive writing has not previously been used to modify middle-aged and older adults' physical self-perceptions, the study included a standard expressive writing group to allow comparisons between this form of expressive writing and reversal-theory framed expressive writing.

Method

Participants

Twenty-three middle-aged and older adults were recruited to participate in the study from a residence for people over 55 years of age located in the UK, after having responded to a recruitment poster or email requesting volunteers to take part in the study; of these, 15 completed the study. Seven of the eight participants who dropped out did so due to illness or relocation, with only one citing study demands as the reason. The sample comprised 9 females and 6 males, all white British and ranging in age from 57-89 years (mean = 72.5 ± 11.3 years). Criteria for inclusion in the study were as follows: aged 55 years and above; fluent in written and spoken English; functionally healthy and not currently meeting physical activity recommended guidelines. On recruitment to the study, using a random number generator, participants were allocated to the reversal-theory framed expressive writing group or the standard expressive writing group. The final reversal-theory framed expressive writing group comprised 7 participants, including 4 females and 3 males, ranging in age from 57-83 years (mean = 68.4 ± 9.9 years). The final standard expressive writing group consisted of 8 participants, including 5 females and 3 males, ranging in age from 61-89 years (mean = 76 ± 11.9 years).

Procedures

The study received ethical approval from the Research Ethics Committee at the College of Engineering, Swansea University (Approval number: JH_2019-094). Prior to completing expressive writing, in session 1, all participants were interviewed about their possible selves using the interview version of Cross and Markus' (1991) Possible Selves Questionnaire, developed for use with older adults (Hooker & Kaus, 1992). Participants are asked to list their hoped-for and feared possible selves and then identify the most important of each of these. The measure adequately assesses future selves and has been used previously in relation to health and exercise (e.g., Hooker & Kaus, 1992; Whaley, 2003; Whaley & Schrider, 2005).

Both groups then completed a 20-minute session of expressive writing following the instructions provided in Table 1. All participants completed their writing sessions independently and in their own homes due to COVID-19 restrictions that precluded meeting in person at the time of the study.

The reversal-theory framed expressive writing group then learnt how to use the Eight Rooms Imagery Technique, following the protocol that is described in Ellis (2008) and Hudson and Day (2012). Due to COVID-19 restrictions that precluded meeting in person at the time of the study, the training was delivered to each participant individually over Zoom®, using a pre-recorded video to guide participants through the imagery exercise and use of the Eight Rooms Technique to generate metamotivational states.

Both groups of participants then completed five subsequent 20-minute expressive writing sessions on separate, consecutive days, either writing by hand or typing, whichever they preferred. The standard expressive writing group followed the same instructions on each occasion (see Table 1) and in line with Hudson and Day's (2012) protocol, the reversal-theory framed expressive writing group followed

Table 2

Expressive writing instructions for reversal-theory framed expressive writing sessions (this sample is for the telic-paratelic metamotivational states)

During today's writing session, your task is to write about your deepest thoughts and feelings about yourself physically, including being physically active, your physical health, your physical abilities and your physical appearance. Please make sure you focus on how you feel right now. You could refer to things that are relevant and have happened previously but you must focus on thoughts and feelings you are experiencing now. What you write about in relation to this topic is up to you but it must be personally relevant to you. In your writing, the most important thing is that you really let go and explore your deepest emotions and thoughts. I would like you to spend the first 10 minutes writing about yourself from a serious perspective so use the imagery technique and the cues on your notecard to help you to get into this state by going into your serious room. I would like you to spend the last 10 minutes writing about yourself from a playful perspective so use the imagery technique and the cues on your notecard to help you to get into this state by going into your playful room. Do not worry about spelling, grammar, or sentence structure and remember all of your writing will be completely confidential. Take as much time as you need to help you get into each of the two states before you start writing. It may help to begin by closing your eyes and relaxing like we did in the imagery session.

these instructions in the final session whereas during sessions 2-5 they used the Eight Rooms Imagery Technique prior to writing from different metamotivational state perspectives: telic and paratelic in session 2; negativistic and conformist in session 3; autic mastery and autic sympathy in session 4, and alloic mastery and alloic sympathy in session 5 (Table 2 provides the telic-paratelic metamotivational state session instructions as an example).

Following the final expressive writing session, both groups were interviewed about their possible selves and, using a semi-structured interview schedule, were interviewed about their experiences and perceptions of the expressive writing. The interviews asked participants to discuss the following: their experience of the writing task; if the task became easier or more difficult as sessions progressed; if anything changed as a result of writing about themselves; if the writing experience changed how participants looked at themselves or anything they did; and if the experience will change how they approach anything, think about themselves or act in different areas of their life in the future. In addition, the individuals in the reversal theory group were asked to discuss their experiences of writing from the different metamotivational perspectives: if they found any easier, more difficult, more or less useful, and if they would normally view themselves from these different perspectives.

Due to COVID-19 restrictions that precluded meeting in person at the time of testing, by necessity, interviews were conducted over the phone or over Zoom. The interviewer noted verbatim individuals' responses to the interview questions.

Data Analysis

Possible Selves. Participants' reported possible selves before and after the expressive writing intervention were first identified, then qualitatively labelled with a category to reflect the underlying idea behind each response. Next, these categories were deductively analyzed to identify the reversal theory metamotivations that underpinned each of the categories. For example, "Look after myself and put myself first" was inductively categorised as *self-care* and subsequently deductively categorised as autic sympathy. We then sought to identify the most prevalent categories of hoped-for selves and feared selves and their associated metamotivations in each group and compared those reported before and after the expressive writing intervention.

Perceptions of expressive writing. Table 3 presents an outline, containing information discussed by Verdinelli and Scagnoli (2013), to display the phases and tasks used to analyze the qualitative data. Each participant's interview responses were first transcribed verbatim and inductively analyzed using reflexive thematic analysis (described by Braun & Clarke, 2019) to identify themes that described the underpinning meaning of each relevant quote (Table 3, Phase 1).

Two of the authors (JH) and (RG) each independently analyzed responses from one writing group and, to support the rigor of our processes, acted as critical friends to each other. They discussed each analysis and queried the categorisations and deduced metamotivations to offer ways to explore alternate interpretations of participants' responses. These were used to develop narrative summaries, based on verbatim quotes, for each participant, that reflected these themes (Table 3, Phase 2).

Consideration of themes and these case summaries demonstrated that participants within each group overall had a collective, shared experience as themes were shared across participants in that group. This enabled us to use a composite vignette approach to portray the findings (Table 3, Phase 3). There were of course some exceptions as not all participants had this identical same experience; thus, their responses did not fit into the themes that were identified and these are discussed separately.

We developed vignettes using the participants' own words as a way to succinctly illustrate how the data look (in line with the approach adopted by Blodgett et al., 2011; Table 3, Phase 4). Rather than presenting separate themes that can fragment the nature of the overall experience, this approach to representing the data provides a collective representation of each group member's experiences in one all-encompassing narrative (Spalding & Phillips, 2007).

Table 3
Composite vignette development methodological overview

Phase & Tasks
Phase 1: Development of themes
• Verbatim transcription of interviews
• Inductive reflexive thematic analysis
• Initial labeling of themes
Phase 2: Critical interrogation of themes
• Researchers critically discuss themes
• Deduction of metamotivational states represented in the themes
• Development of individual case narrative summaries
Phase 3: Review of case summaries
• Comparison of themes and case summaries between and within each expressive writing group
• Decision-making regarding how best to represent the participants' experiences in composite vignettes
Phase 4: Generation of composite vignettes
• Writing of composite vignettes using participants' own words from interview transcripts
• Reflecting on final composite vignettes to check they represent the themes identified and participants' experiences
• Ensuring that experiences not reflected by these vignettes are not ignored and discussed appropriately

Results

Possible Selves

Hoped-for Selves. In both the reversal theory and standard expressive writing groups, all of the reversal theory metamotivations were reflected in participants' reported hoped-for selves with the exception of the conformist state. Examples to illustrate the expressed hoped-for selves in both groups are presented in Table 4.

Feared Selves. In both the reversal theory and standard expressive writing groups, feared selves reported both before and after the writing intervention were predominantly characterized by the following transactional state combinations: autic mastery, alloic sympathy, and autic sympathy —reflecting fears of being alone, losing independence, and ill-health, respectively, "not being mobile" (losing independence; reversal theory group); "unable to provide support to my daughter and wife" (unable to help others; standard writing group), and "being isolated at home" (isolated; reversal

theory group). There was only one instance of a feared self that was underpinned by the somatic states: paratelic conformity: "a miserable old woman" (joyless; standard writing group).

Comparison of the hoped-for and feared selves both before and after expressive writing and between writing groups revealed that the number and nature of these showed no real variation. However, of interest was the fact that the whole array of metamotivations was represented, apart from the conformist state. In addition, we observed that future selves were expressed as actions rather than self-descriptions. An example of this is noted above; one participant identified that, "I would like to write a book" rather than, "I would like to be an author".

Composite vignettes

Experiences of Reversal Theory Expressive Writing

This was something very different and I have not sat down to write like that before so it was difficult, it made me think about myself and the future although these things I had thought about given my age were no surprise. Sometimes I felt a bit negative but realised there is a lot in there and I do not let things push me down; in fact I really enjoyed myself and I was also able to let off some steam in my writing.

I found writing from the different perspectives enjoyable, interesting, thought provoking and helpful, and it made me reflect on my positive qualities, like a positive outlook. It was challenging as there was a lot to process though and it took me a while to get my head round the different perspectives, but once I did, I found all of the rooms useful and interesting in their own way as this was very new to me. They made me think of things in and from a different perspective and now that I've become more aware of these frames of mind, I'm more conscious of how the mind thinks and acts.

The writing opened my eyes about myself as I have never looked at myself like this before, I'm not one to dream, I rather just get on and do, I don't tend to overthink something. Doing the writing hasn't changed how I see myself and my life as I realised how much I do to keep mentally and physically active, like chair activities/dancing and yoga, even though I have mobility issues. It made me appreciate the relationships I have with others, and that I need to work on maintaining friendships I have and supporting my friends more often. By looking at myself from different views I've been able to see areas where I'm doing really well, and areas where I'm struggling and need help.

Using the writing technique has made me think more about my future and what goals I want to set, like learning new skills, staying mentally and physically active and

Table 4

Categorizations and underpinning reversal theory metamotivations of hoped-for selves expressed by reversal theory and standard expressive writing groups

Hoped-for self	Inductive category	Reversal theory underpinning
I would like to write a book (reversal theory group)	Skills, knowledge and achievement	Telic mastery
I would also like to take up dancing (reversal theory group)	New ventures	Paratelic mastery
Travel and have a home in a hot place (standard writing group)	Broadening horizons	Paratelic negativist
Still looking after others even if it's only baking and cooking (reversal theory group)	Supporting and developing others	Alloic sympathy
Look after myself and put myself first (standard writing group)	Self-care	Autic sympathy
Politically influential on behalf of a better society (reversal theory group)	Making a difference	Alloic mastery
Stay mentally alert (standard writing group)	Maintaining and improving health	Autic mastery

writing that book (one day!). I'm thinking proactively about areas of my life I can change, not what I can't, like looking forward to the future and not regretting the past. There seem to be fewer obstacles in the way to doing what I want to do and although nothing has changed yet, a little realisation is the first step to making a change. I'm more positive, focused, and determined.

Overall, I understood the process and got the idea of how to put myself in the particular room. I found it easy to look at all the things I do and what I have achieved. But I found it difficult to look towards the future which may not be as I have hoped and I found writing about my future self quite scary. I found it difficult thinking about stressful events such as my accident and changes in my life; I pulled up my big knickers and got through them but I wouldn't like to revisit them. I found all the rooms quite challenging and took a lot to process but they were all useful in their own way, although some were more difficult or less useful than others.

The point of departure from this collective experience was in people's experiences of the different rooms. Whilst there was a general feeling that the reversal-theory framed approach was useful, when we probed further, there was no consensus or discernible pattern to which rooms were easiest or most difficult to write in or which were most or least useful. The following illustrate the varied experiences that participants had writing in each of the rooms:

"*I really did not like the playful room and could not get my mind into that frame. I like the serious room as I pictured*

where I would sit and do my writing";

"*Self-sympathy was the most useful and serious was the least useful*";

"*I found the easiest was conforming and the hardest was self-sympathy*"; and

"*The easiest was playful as that involved having fun and the hardest was mastery for others*",

with some rooms completely closed off to some participants:

"*There were rooms I really could not picture in my head*".

As illustrated in the collective vignette above, this was a new experience and a new approach to looking at themselves and their lives for the majority of our participants, but others suggested that this was not completely new to them. They commented,

"*Yes, I guess [I would normally look at myself from all these different perspectives] as I am a bit of an overthinker about things*", "*...but without using the terminology*".

Similarly, whilst most participants did not seem to find the reversal-theory framed writing a chore, two participants found the writing process itself challenging, commenting that,

"...*the first session was okay, I just put pen to paper and started writing, and although I enjoy writing I think 20 minutes is a long time to write continuously*" and

"*it was okay but it was a bit like work*".

Experiences of the Standard Expressive Writing

It was something new to me so it was okay but it was a real challenge and was often emotionally draining, as I don't often think about myself and writing about inner thoughts is quite tough. On some days it was easy but on others I could not focus so found it difficult. I did find it weird as I have never really written about my thoughts and feelings and sometimes I wasn't in the frame of mind to sit and write about my deepest thoughts and feelings.

I sometimes felt I was repeating myself because of the mental state I was in. It didn't get easier as I was writing the same thing each time so it got boring. I struggled to write and thought 20 minutes was a very long time each day to write, so it could have been shorter or have fewer sessions.

It made me reflect on my current situation and aware that I'm not doing enough and could and should do more as I noticed my lack of exercise. This was hard to realise and it's the first time I have looked at myself in this way so as the sessions went on I knew what was expected and didn't want to write for that long.

Looking forward, it made me think about the changes I need to make to my lifestyle and a bit more focused on achieving my goals and keeping focused. I have started to plan changes for the future and I will look at things more fully now, be more critical and try not to rush making decisions. I will think more about planning my future and make sure I keep active and healthy.

I'm not certain if it'll change how I approach things in future... it may do, but I don't think it's changed the way I see myself or my priorities. Although it was much harder than I thought it would be, I was quite pleased that I could relate to most of the questions, was more creative than I imagined and I am glad I had the opportunity to do it.

In contrast to the above collective experience, two respondents did find that the process got easier because of the repetitive nature of the writing task, but was nevertheless not engaging because of this repetition, for instance, commenting that:

"*It was hard although it did get easier with time and I found it hard to focus in the latter sessions due to repetition*

as it became the same reflections".

One participant also discussed how the unique context of the pandemic had affected her experience of the expressive writing:

"*I ran out of things to write because the pandemic has meant I've not been doing anything so I ended up writing the same things. It might change the way I approach things and what I do but I don't think much will change at the moment as we're in lockdown and I take every day as it comes. A year ago my response to it may have been different*".

Finally, in this group, most respondents identified that whilst they had increased their self-awareness and were possibly making plans to change, they had not taken any action or made any changes yet; with one exception:

"*I have got off my backside and done something as I know I need to stay fit and strong for my family but whether I lapse back into old habits, time will tell*".

Discussion

The aim of this study was to explore the feasibility and experience of using reversal-theory framed expressive writing to modify middle-aged and older adults' physical and physical activity-related possible selves and behavior. This was the first study to do so and as such offers new knowledge about reversal theory application and the use of expressive writing in different ways and with different populations. The study extends the evidence-base pertaining to the use of expressive writing with older adults (Caplan et al., 2005; Guinther et al., 2003; Consendine et al., 2012; Keefe et al., 2013) and the use of reversal-theory framed expressive writing, as only one study has previously used this approach with an athlete sample (Hudson & Day, 2012). Fundamentally, the intervention appears to be feasible for use by the study's target group. Those individuals who completed reversal-theory framed expressive writing were able to develop rooms representing the eight metamotivational states using the Eight Rooms Imagery Technique and recreate these to frame their expressive writing from different metamotivational state perspectives in subsequent sessions.

Regarding our participants' experiences of the reversal-theory framed expressive writing, on the whole it was generally well-received but nonetheless challenging and thought provoking. In line with previous research by Hudson and Day (2012) that has used this approach to expressive writing, the process encouraged new ways of viewing the topic of interest, increased awareness and new reflections, and introduced a positive, action-oriented approach involving intended plans to make positive changes to oneself and one's behavior.

Not unexpectedly, given the individual differences identified in responses to expressive writing in previous research (e.g., Caplan et al., 2003; Guinther et al., 2003; Magai et al., 2009), this was not the case for all of the participants who completed this form of writing; for some, it was boring and repetitive. Similarly, not all metamotivational states were perceived in the same way by all participants, the same state(s) were liked and disliked or found to be difficult or hard to experience in similar measure to each other. This might be related to metamotivational dominances or to life experiences that have shaped the most dominant metamotivational states experienced by an individual. For example, as discussed by one participant, a lifelong career in the military where the telic state is most often operative led to them experiencing difficulties recreating the rebellious and self-sympathy states. We do not know the short or long-term impacts of this for the individual and their experiences but this could be an important question for future research to explore.

Although for most participants adopting different reversal theory perspectives was a new experience, for some, this was not unfamiliar. Our data do not provide further elaboration on this finding but they highlight the importance of lay theories of metamotivational states and reversals, in line with the proposed *mental ethology* by Apter (2013) that seeks to comprehend how states are understood by, and relevant for, people in their everyday lives. This appears to be a further important avenue for future research. Analysis of expressive writing produced during reversal-theory framed expressive writing might also help to inform this inquiry into lay theories of metamotivational states as previous analysis of this writing has helped to understand the writer's story in the narrative of their writing (Hudson & Day, 2012). It would also be useful to analyze the content of reversal-theory framed expressive writing from the perspective of enhancing understanding of middle-aged and older adults' physical self-perceptions as these have yet to be looked at through the lens of reversal theory.

Standard expressive writing, as has been shown in previous research (Crawley et al., 2018), was perceived as challenging but also as a useful stimulus for personal reflection, increasing participants' awareness of their current lifestyle and resulting in some stated intentions to change behaviors. However, although we make this claim tentatively given the nature and scope of our evidence, more participants did find this approach more repetitive and boring than in the reversal-theory framed expressive writing group and the process appeared to stimulate less in-depth self-reflection. This might be attributed to the context in which the writing took place as the COVID-19 pandemic was ongoing and activities outside the home remained restricted for all the population but particularly for older adults. Potentially people were bored in their writing because they had little to occupy them and so little to write using the same instructions each time. In contrast, the reversal-theory framed expressive writing group were at least able to write from a new perspective each time which possibly helped to reduce boredom.

Not surprisingly, given the short time frame that the study used, none of the participants in the two expressive writing groups discussed any changes in their behavior. Longer-term follow-up in future studies would therefore be useful to determine if the increased awareness, self-reflection and intention to change were associated with changes in actual behavior. Similarly, we observed little difference in the metamotivational states that characterized the possible future selves that participants reported prior to and after the expressive writing experience, or between groups. Of interest though was the metamotivational richness of these possible selves, albeit with a tendency for the transactional states to dominate expressed feared selves.

This makes sense given that these states center on connections to, and support for, self and other, which can be lost as part of the transitions we experience as we grow older (Morgan et al., 2019). The metamotivational richness of these middle-aged and older adults' future selves is encouraging as it possibly suggests a willingness to look beyond fixed versions of oneself in older age and beyond the societal stereotypes of aging discussed previously (cf. Phoenix & Griffin, 2013; Levy, 2009). This is a somewhat speculative suggestion that we urge other researchers to explore further. We also recommend further inquiry into the ways in which people express their future selves. In our study, these were most likely expressed in terms of behaviors or actions, rather than identities or self-descriptions. For instance, an individual might express a desire to write a book but this was not expressed as being an author, or to be fit and active, not to be an exerciser. Future research could explore if this is a wider phenomenon and, if so, if this is a measurement or conceptual issue.

Conclusion

Although the size of the sample and the unique context in which the study was conducted limit the conclusions which can be drawn from this study, it nevertheless presents an original exploration of the use of reversal-theory framed expressive writing to encourage middle-aged and older adults to modify their physical self-perceptions. Indeed, this is the first study of any form of expressive writing that focuses on middle-aged and older adults' physical self-perceptions. Similarly, whilst we were required to conduct the study online during the COVID-19 pandemic, we maintained the highest level of rigor possible, with random allocation to writing groups, a standardized intervention approach, the use of multiple analysts, a critical friend, and attention to data and cases that did not conform to the overall narratives of our findings during analysis and interpretation of the data.

This study has generated a number of avenues for further exploration that could have significance for enhancing rever-

sal theory understanding (e.g., uncovering the mental ethology of everyday state experiences, the factors that influence one's ability to experience different states, and the implications of this). In addition, adoption of a reversal theory interpretation might offer a new perspective on middle-aged and older adults' physical self-perceptions and how they can be modified.

The short timeframe of this study meant we were unable to observe changes in behavior, and we recommend that this is done in future studies in two ways. First, in relation to adopting and maintaining new behaviors over time, such as being physically active. Second, in relation to whether inducing specific reversal theory states can influence daily behavioral choices, such as whether or not to attend an exercise class. Studies that explore the latter behavioral outcome might want to experiment with using the reversal theory based imagery that we used here to induce or match currently experienced metamotivational states or, with other situational approaches that are being used in ongoing work, such as text messages that match the individual's current focal metamotivational state (Hughes et al., 2019).

There is a need to identify person-focused interventions that help the individual to reframe aging (Hausknecht et al., 2020) and our study suggests that a reversal-theory framed expressive writing intervention offers a feasible intervention for this purpose and might be used as a simple, low cost and acceptable intervention to encourage middle-aged and older adults to view both themselves and their lives as full of possibilities.

References

Apter, M. J. (2013). Developing reversal theory: Some suggestions for future research. *Journal of Motivation, Emotion and Personality, 1*(1), 1-8. DOI: 10.12689/jmep.2013.101

Aggio, D. et al. (2017). Association between physical activity levels in mid-life with physical activity in old age: A 20-year tracking study in a prospective cohort. *BMJ Open, 7*, e017378. DOI: 10.1136/bmjopen-2017-017378

Baikie, K. A., & Wilhelm, K. (2005). Emotional and physical health benefits of expressive writing. *Advances in Psychiatric Treatment, 11*, 338e346.

Blodgett, A. T., Schinke, R. J., Smith, B., Peltier, D., & Pheasant, C. (2011). In indigenous words: Exploring vignettes as a narrative strategy for presenting the research voices of Aboriginal community members. *Qualitative Inquiry, 17*(6), 522-533. DOI: 10.1177/1077800411409885

Booth, F. W., Gordon, S. E., Carlson, C. J., & Hamilton, M. T. (2000). Waging war on modern chronic diseases: Primary prevention through exercise biology. *Journal of Applied Physiology, 88*, 774–787.

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589-597. DOI: 10.1080/2159676X.2019.1628806

Caplan, S. E., Haslett, B. J., & Burleson, B. R. (2005). Telling it like it is: The adaptive function of narratives in coping with loss in later life. *Health Communication, 17*(3), 233-251. DOI: 10.1207/s15327027hc1703_2

Consendine, N. S., Krivoshekova, Y. S., & Magai, C. (2012). Play it (again) Sam: Linguistic changes predict improved mental and physical health among older adults. *Journal of Language and Social Psychology, 31*(3), 240-262. DOI: 10.1177/0261927X12446736

Crawley, R. et al. (2018). Feasibility and acceptability of expressive writing with postpartum women: A randomised controlled trial. *BMC Pregnancy Childbirth, 18*, 75. https://doi.org/10.1186/s12884-018-1703-7

Cross, S., & Markus, H. (1991). Possible selves across the life span. *Human Development, 34*, 230–255.

Dark-Freudeman, A., West, R. L., & Viverito, K. M. (2006). Future selves and aging: Older adults' memory fears. *Educational Gerontology, 32*, 85–109.

Department of Health and Social Care (2019). *UK Chief Medical Officers' physical activity guidelines*.

Earnest, C. P. et al. (2013). Dose effect of cardiorespiratory exercise on metabolic syndrome in postmenopausal women. *American Journal of Cardiology, 111*, 1805–1811. DOI: 10.1016/j.amjcard.2013.02.037.

Ellis, S. (2009). *Examination of the clinical benefit of adding Reversal Theory concepts to the expressive writing paradigm*. Dissertation. 437. https://digitalcommons.latech.edu/dissertations/437

Franco, M. R. et al. (2014). Older people's perspectives on participation in physical activity: A systematic review and thematic synthesis of qualitative literature. *British Journal of Sports Medicine, 49*, 1268-1276. DOI:10.1136/bjsports-2014-094015

Guinther, P. M., Segal, D. L., & Bogaards, J. A. (2003). Gender differences in emotional processing among bereaved older adults. *Journal of Loss & Trauma, 8*(1), 15-33. DOI: 10.1080/15325020305874

Hausknecht, S., Low, L-F., O'Loughlin, K., McNab, J., & Clemson, L. (2020). Older adults' self-perceptions of aging and being older: A scoping review. *Gerontologist, 60*(7), e524-e534. DOI:10.1093/geront/gnz153

Hooker, K., & Kaus, C. R. (1992). Possible selves and health behaviors in later life. *Journal of Aging and Health, 4*, 390–411.

Hudson, J., & Day, M. (2012). Athletes' experiences of expressive writing about sports stressors. *Psychology of Sport & Exercise, 13*, 798-806. DOI:10.1016/j.psychsport.2012.05.005

Hughes, D. C. et al. (2023). Feasibility of a pilot study using reversal theory states to test holistic interventions to maximize cancer survivors' quality of life. *Journal*

of Motivation, Emotion and Personality, 8, 6-20. DOI: 10.12689/jmep.2019.802

Keefe, F. J., Porter, L., Somers, T., Shelby, R., & Wren, A. V. (2013). Psychosocial interventions for managing pain in older adults: Outcomes and clinical implications. *British Journal of Anaesthesia, 111*(1), 89-94. DOI:10.1093/bja/aet129

Lee, I. M. (2012). Effect of physical inactivity on major noncommunicable diseases worldwide: An analysis of burden of disease and life expectancy. *Lancet, 380*, 219–229.

Lee, L. L., Arthur, A., Avis, M. (2008). Using self-efficacy theory to develop interventions that help older people overcome psychological barriers to physical activity: A discussion paper. *International Journal of Nursing Studies, 45*(11), 1690-1699. DOI: 10.1016/j.ijnurstu.2008.02.012

Levy, B. R. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science, 18*(6), 332–336. https://doi.org/10.1111/j.1467-8721.2009.01662.x

Magai, C., Consedine, N. S., Fiori, K. L., & King, A. R. (2009). Sharing the good, sharing the bad: The benefits of emotional self-disclosure among middle-aged and older adults. *Journal of Aging and Health, 21*(2), 286-313. DOI: 10.1177/0898264308328980

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954–969.

Marquez, D. X., Aguiñaga, S., Vásquez, P. M., Conroy, D. E., Erickson, K. I., Hillman, C., Stillman, C. M., Ballard, R. M., Sheppard, B. B., Petruzzello, S. J., King, A. C., & Powell, K. E. (2020). A systematic review of physical activity and quality of life and well-being. *Translational Behavioral Medicine, 10*(5), 1098–1109. https://doi.org/10.1093/tbm/ibz198

Morgan, G. S., Willmott, M., Ben-Shlomo, Y., Haase, A., & Campbell, R. (2019). A life fulfilled: Positively influencing physical activity in older adults – a systematic review and meta-ethnography. *BMC Public Health, 362*. https://doi.org/10.1186/s12889-019-6624-5

NHS Digital (2023). Health Survey for England 2021 Part 2. https://digital.nhs.uk/data-and-information/publications /statistical/health-survey-for-england/2021-part-2

Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science*, *8*(3), 162-166.

Phoenix, C., & Griffin, M. (2013). Narratives at work: What can stories of older athletes do? *Aging and Society, 33*(2), 243-266. doi:10.1017/S0144686X11001103

Older People's Commissioner for Wales (2021). *State of the Nation Report*, *2021*.

Song, M., & Kong, E-H. (2015). Older adults' definitions of health: A metasynthesis. *International Journal of Nursing Studies, 52*, 1097-1106. http://dx.doi.org/10.1016/j.ijnurstu.2015.02.001

Spalding, N. J., & Phillips, T. (2007). Exploring the use of vignettes: From validity to trustworthiness. *Qualitative Health Research, 17*(7), 954-962. DOI: 10.1177/1049732307306187

United Nations, Department of Economic and Social Affairs, Population Division (2019). *World Population Prospects 2019: Highlights. ST/ESA/SER.A/423.*

Verdinelli, S., & Scagnoli, N. I. (2013). Data display in qualitative research. *International Journal of Qualitative Methods, 12*, 359-381.

Whaley, D. E. (2003). Future-oriented self-perceptions and exercise behavior in middle-aged women. *Journal of Aging and Physical Activity, 11,* 1-17.

Whaley, D. E. (2004). Seeing isn't always believing: Self-perceptions and physical activity behaviors in adults. In M. R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 289–311). Fitness Information Technology.

Whaley, D. E., & Schrider, A. F. (2005). The *process* of adult exercise adherence: Self-perceptions and competence. *The Sport Psychologist, 19,* 148-163.

World Health Organisation (2020). *Healthy ageing and functional ability.* https://www.who.int/news-room/questions-and-answers/item/healthy-ageing-and-functional-ability. Accessed August 12th, 2022.