


On-Time Maturation in Female Adolescent Ballet Dancers: Learning From Lived Experiences

Journal of Early Adolescence
2021, Vol. 0(0) 1–29
© The Author(s) 2021



Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/02724316211036752
journals.sagepub.com/home/jea



Siobhan B. Mitchell^{1,2} , Anne M. Haase³, and Sean P. Cumming¹

Abstract

This study employed semi-structured interviews and Interpretative Phenomenological Analysis to explore experiences of on-time maturation in nine adolescent ballet dancers from across three vocational ballet schools in the United Kingdom. Two themes were identified as central to their experiences: ‘A right and a wrong way to grow’, and fitting in and moving forward. Instead of perceiving themselves as ‘average’ and experiencing a relatively easy pubertal transition, on-time dancers described unique challenges associated with a fluctuation between fitting in and not fitting in within their social context. The implications of on-time maturation in this context are complex and do not appear to follow the same trajectory as early maturing ballet dancers nor on-time non-dancers.

Keywords

adjustment, maturation, phenomenology, pubertal development

¹University of Bath, Bath, UK

²Child Mental Health Group, University of Exeter Medical School, Exeter, UK

³Victoria University of Wellington, Wellington, New Zealand

Corresponding Author:

Siobhan. B. Mitchell, Child Mental Health Group, University of Exeter Medical School, College House, St. Luke’s Campus, Heavitree Road, Exeter EX1 2LU, UK.

Email: s.b.mitchell@exeter.ac.uk

Puberty is a key process that young dancers have to negotiate, influencing their pathway in dance (Mitchell et al., 2016). More specifically, pubertal timing, which can differ by up to 5 years from chronological age, has been shown to influence behaviour, physical and psychological factors (Gluckman & Hanson, 2006; Malina et al., 2004; Rowe, 2002). Although some psychological and social aspects of puberty in dancers have been examined (Pickard, 2013; Stark & Newton, 2014), few studies have considered the context of ballet and the interplay between biological changes and psychosocial adaptation (Brooks-Gunn & Warren, 1985; Brooks-Gunn et al., 1989).

Children and adolescents can participate in ballet training at different levels, recreational and vocational. Recreational dance training can be described as having the goal of participation oriented around the enjoyment and fun of dance as an activity. Vocational training (also known as full-time or pre-professional) pertains to a more serious involvement with dance with students undertaking highly specialised, intensive training designed to prepare them for a professional career in the dance industry ((CDET, 2011) Mitchell et al., 2016). While puberty is an interval during which risks to health and well-being are increased, experiencing puberty within the context of vocational ballet training has the potential to amplify detriment to psychological well-being (Brooks-Gunn & Warren, 1985; Buckroyd, 2000). Moreover, how well individuals adjust to changes at puberty has been highlighted as critical for psychological well-being (Ackard & Peterson, 2001; Summers-Effler, 2004; Tremblay & Frigon, 2005). For young ballet dancers, positive and relatively rapid adaptation to changes is important, with key decisions made about retention throughout the vocational training years (Mitchell et al., 2016).

In ballet, up to 70% of female professional dancers are reported to be delayed in their maturation (Hamilton et al., 1997) with only 6% of girls in vocational ballet training reported as early maturers (Brooks-Gunn & Warren, 1985). Early maturing girls experience greater pubertal gains in size, absolute/relative fat mass and absolute lean mass (Malina et al., 2004). This more intensive growth spurt results in comparatively greater torso growth, relative to shorter leg length (Gay et al., 2014). Within the social context of ballet, these physical attributes are perceived as negative (Mitchell et al., 2016). Early maturers may be selected out during the first few years of training, either by themselves or in auditions, as they will have breast buds and may also have more body fat than on-time or late maturing nine or 10 year olds (Brooks-Gunn & Warren, 1985; Hamilton et al., 1997).

Early maturing individuals, both dancers and non-dancers, are more susceptible to a range of negative psychosocial outcomes, such as negative body image and disordered eating, within environments that accentuate peer comparison and thinness (Brooks-Gunn & Warren, 1985; Brooks-Gunn et al., 1989; Fairclough & Ridgers, 2010; Sherar et al., 2010). Further to this, early maturing girls are as a group, more likely to engage in maladaptive coping

behaviours and/or health risk behaviours, such as smoking and drinking (Magnusson et al., 1985; Wiesner & Ittel, 2002; Wilson et al., 1994), and have poorer psychological outcomes (Ellis, 2004; Graber et al., 2004; Harden et al., 2012; Mendle et al., 2007; Stice et al., 2001). However, our understanding of these outcomes in the context of dance is comparatively lacking (Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1985). Further, our understanding of these outcomes for individuals who mature on-time, neither early nor late, warrants further investigation.

The need to evaluate the influence of the sub-cultures or environments of specific sports on the development of youth athletes has been recommended (Malina et al., 2013, 2015; Mitchell et al., 2016). This applies equally to ballet training and requires consideration of the interplay between the ballet sub-culture; self-perceptions and attitudes towards the body, among others; and the biological maturation of young dancers (Mitchell et al., 2016, 2017).

Some evidence exists that demonstrates the social context of ballet amplifying the effects of maturity timing, influencing psychological well-being and increasing incidence of disordered eating in early and on-time maturing dancers (Brooks-Gunn & Warren, 1985). Thus, the effects of maturity timing are likely to be moderated by the social context, cultural beliefs and individual beliefs about the importance of behaviours associated with maturation (Brooks-Gunn & Warren, 1985; Mitchell et al., 2017).

The work of Brooks-Gunn and colleagues alludes to the somewhat greater complexity which may be associated with psychosocial outcomes in young girls participating in dance. Utilising a Goodness of Fit Model (Lerner, 1985) the authors contend that as it is normative for dancers to mature late, those who mature on-time may experience the same psychosocial disadvantages as early maturing individuals in non-dance populations (Brooks-Gunn & Warren, 1985; Brooks-Gunn et al., 1989). On-time ballet dancers rated themselves as heavy and desired to lose weight (even though they were below their ideal weight), with higher dieting and bulimia scores than their later maturing counterparts (Brooks-Gunn & Warren, 1985). However, non-dancers who were on-time had the most positive body image and fewer psychosocial issues (Brooks-Gunn & Warren, 1985). These findings are supported by a subsequent study where on-time ballet dancers also reported less positive body image, rated themselves as heavier relative to others and reported more dieting in comparison to their later maturing counterparts (Brooks-Gunn et al., 1989). More contemporary research is warranted to explore the experiences of these individuals and to substantiate the suggestion that on-time dancers may be disadvantaged in a similar way to those who mature early.

A variety of theoretical models have been developed to help understand the mechanisms which lead to adaptive or maladaptive outcomes relative to an individual's maturity timing. Most models focus on early and/or late maturation, based on the premise that it is stressful to reach milestones in

development (e.g., puberty) earlier or later than same age peers (Brooks-Gunn, Petersen, et al., 1985). Consequently, in general populations, on-time maturation is expected to yield the most positive adjustment trajectory. In the context of ballet, being ‘on-time’ relative to same age peers is comparatively late relative to non-dance peers, however, it is comparatively early relative to dance peers, thus creating the challenge for the on-time dancer.

Some hypotheses deriving from developmental psychology may have relevance in the context of dance, such as the Deviance Hypothesis (Petersen & Taylor, 1980) and the Contextual Amplification Hypothesis (Ge et al., 2011). The former suggests that early and late maturers differ in their adjustment as a result of their status relative to the rest of the peer group (Petersen & Taylor, 1980). For instance, early maturing dancers, who are in the minority in ballet training, would be considered the ‘deviant’ group and thus, expected to experience the greatest challenges in adjusting at puberty. While this may be the case, consideration of the ‘on-time’ dancer, whose maturation status is similar to many of their peers and yet does not confer advantages to the extent of those who mature late is needed.

Another hypothesis which translates to the context of dance training is the Contextual Amplification Hypothesis (Ge et al., 2011). This hypothesis contends that negative effects of puberty are accentuated in contexts which are adverse, especially in early maturing girls (Allison & Hyde, 2013; Ge et al., 2011). Applied to the context of dance, the hypothesis proposes that an early maturing ballet dancer who experiences visible changes in physique such as widening of the hips and breast development, will be more likely to have a negative experience of puberty (Mitchell et al., 2017). For example, training for long hours in a learning environment which emphasises thinness may increase the likelihood of maladaptive responses in body image and self-esteem in young early maturing dancers (Mitchell et al., 2017). As aforementioned, early maturing individuals are likely to be a distinct minority within vocational ballet training and therefore, it is important to understand to what extent on-time maturation might be analogous to early maturation in this context and what the implications are for the psychosocial adjustment of those individuals.

Given the strong motivation reported in adolescence to ‘fit in’ with peers, the social stimulus value of pubertal change within the context of vocational ballet training is also an important consideration (Kornienko et al., 2016). The Goodness of Fit Model (Lerner, 1985) examines an individual’s reaction to puberty in terms of the ‘goodness of fit’ between their individual characteristics and the demands, attitudes, values and expectations of significant others and their social context (Lerner, 1985). Consistent with this model, characteristics associated with later maturation hold greater social value in the social context of ballet; in other words there is a ‘goodness of fit’ between the demands of the social context and the attributes of the late maturing dancer

(Brooks-Gunn & Warren, 1985; Mitchell et al., 2020). Late maturing girls tend to experience smaller pubertal gains in height, weight and fat mass; greater gains in relative lean mass and a more linear physique (Gay et al., 2014). Due to a greater period of time growing in childhood, these individuals develop longer limbs relative to a shorter torso; these characteristics describe the physique often sought after in ballet (Malina et al., 2004; Pickard, 2015). In terms of psychological characteristics, later maturing girls are reported to be more confident, assured and extroverted and to display reduced health risk behaviours (Cumming et al., 2012; Jones, 1965). Although evidence specific to the vocational ballet context is limited, existing research suggests that experiences of late maturation in dance are highly complex and that while late maturation does confer some advantages, it is not solely advantageous for young dancers (Mitchell et al., 2020). Late maturing dancers have been shown to perceive a number of aesthetic and functional advantages congruent with the well-established bias toward a later maturing physique for ballet; being ‘small’ and not having ‘bits’ is advantageous for these dancers in terms of maintaining a more pre-pubescent look and conforming more easily to the expectations of the ballet world (Mitchell et al., 2020). However, late maturing dancers perceived some significant drawbacks. Despite aesthetic advantages, later maturing dancers were disadvantaged by the current training system which sees them undertaking the most crucial training period during their most rapid period of growth (Mitchell et al., 2020).

It is acknowledged that current theoretical models largely do not encompass psychosocial adjustment relative to those who mature on-time; however, in particular contexts, such as vocational ballet training, the nuances associated with pubertal timing and the implications for the individual in their context may warrant consideration within these theoretical models.

This present study is part of a larger suite of studies exploring experiences of early, on-time and late maturing girls growing up in the context of vocational ballet training. An exploratory qualitative approach has been employed to develop an understanding of the interplay between biological, sociocultural and environmental factors in experiences of growing up in dance. More specifically, seeking to understand ‘What are the lived experiences of on-time maturing adolescent dancers in the context of vocational ballet training?’ and to address the research questions ‘Does maturity timing play a role in experiences of vocational ballet training?’ and ‘How does experiencing on-time maturation influence day to day life in the context of ballet training?’

This study focuses primarily on exploring qualitative experiences and within these experiences, how sociocultural, psychological and biological factors interact in order to advance our understanding of experiences of on-time maturation in the context of vocational ballet training and subsequently to inform future theoretical models of pubertal timing and social adjustment relative to on-time maturation. With a greater understanding of factors which are salient to dancer experiences of

growing up in a ballet training context we can examine how experiences align with existing theoretical models of pubertal timing and social adjustment and contribute to informing future models in terms of salient factors and applied context.

Methodology

Design

A qualitative design utilising semi-structured interviews and interpretative phenomenological analysis (IPA) was employed to explore the experiences of on-time vocational ballet dancers. Semi-structured interviews were used to obtain experiential accounts about experiences of maturing and developing within a vocational ballet training context.

The Pubertal Development Scale (PDS) was used to screen for interview participants of differing maturation characteristics (Carskadon & Acebo, 1993; Petersen et al., 1988). This measure (PDS) is a self-report instrument designed for adolescent samples to report on the development of five indices of pubertal growth: growth, body hair, skin changes, changes to the voice and growth of facial hair for males and breast development and age of menarche for females (Bond et al., 2006; Petersen et al., 1988). Participants can respond on a four-point scale from 'not yet started' to 'seems complete'. If menarche has started, there is a further question for the year and month of first menstruation and age at onset. The PDS has been reported to have internal consistency ranging from .68 to .83 across a longitudinal study (Petersen et al., 1988). Validity for the PDS when compared to measurement by physical exam has been reported between .61 and .67 (Brooks-Gunn et al., 1987).

Participants

Three UK vocational ballet schools were recruited for the study. In each school female students age 11–17 ($n = 188$) were invited to participate by completing the PDS (Carskadon & Acebo, 1993; Petersen et al., 1988). Interview participants were then selected on the basis of differing maturation characteristics. Maturity timing was derived from PDS scores and category scores, in addition to using age of menarche as an indicator of timing. Average age of menarche was calculated across the overall sample, with ≤ 12.2 defined as early, 12.2–14.2 as on-time, ≥ 14.2 as late. Eight to 10 students from each school were invited to take part in an interview, the overall sampling aim between the schools was to achieve a minimum of eight interviews with individuals in each maturity group. A sample size of 28 interviews was achieved (early $n = 10$, on-time $n = 9$, late $n = 9$). This article will discuss findings from the nine on-time dancers in this sample. All participants in this sample were White, with a mean age of 13.8 years, mean age of menarche

13 years, with participants from all three schools ($n = 3$ school 1, $n = 2$ school 2, $n = 4$ school 3).

Procedure

All procedures were approved by the University Research Ethics Approval Committee for Health. Each participant was provided with an information and consent form prior to data collection, with the researcher present to answer any questions. In the case of any individual being identified as at risk to themselves or others, the policies of participating schools were followed. The data collection process followed two main steps: (a) Conduct screening and (b) Conduct interviews based on screening results.

Prior to conducting interviews, the lead researcher reflected on her own experiences, including her time in vocational ballet training as an adolescent and her experiences of maturing on-time in this context. The reflexive process included completing written reflections of these experiences prior to data collection and referring to these notes throughout the data analysis process to facilitate reflexivity. It is acknowledged that this previous experience means that the researcher comes to the topic with her own experiences and assumptions, this reflexive process was intended to aid the researcher in separating the experiences of her interviewees from her own (Patton, 1990; Seidman, 1998).

Before completing data collection, pilot interviews were conducted with three aspiring adolescent ballet dancers. Pilot interviews highlighted the need to include ‘ice breaker’ questions during subsequent interviews (Gibson, 2007). Semi-structured interviews were conducted face to face in a private setting on school premises. Participants had the opportunity to ask any questions they had about the research, and terms such as ‘maturation’ were clarified (i.e. maturation was described as the process of growing and developing, to becoming an adult). The interview guide included questions such as ‘As ballet dancers when you go through puberty do you think it’s seen as a good or bad thing?’, ‘How do you feel about physical changes in comparison to your peers?’ and ‘How do you feel about these changes for you as a dancer (within the context of your ballet training)?’ The mean duration of all the interviews was 42 minutes (with a range from 30 to 60 minutes) (Shaw, 2010). At the conclusion of each interview, reflective notes were recorded and referred back to during the analysis process.

Data Analysis

Data analysis followed Smith (2003) guidance for conducting IPA. Interviews were transcribed verbatim, with transcription undertaken by an external company due to the timeframe of the study. The name of each participant and

any identifying information was removed from the interview transcripts; each was coded OT (on-time) with a unique number, for example, OT1.

Following an IPA approach, the analysis was divided into three phases: (1) summarising experiences described by the participant, (2) evaluating their meaning and (3) evaluating the self-reflections of each individual to explore what they make of their own experiences (Lyons & Coyle, 2007). The interpretative process coupled with the identification of themes comprised the final stage of analysis, a narrative account of the interplay between interpretations of the researcher and each participant's experiences in their own words (Smith et al., 2009). The stages form an audit trail illustrating how interpretations were made based on the data. Steps were taken to strengthen the credibility and methodological quality or trustworthiness of the research (Sparkes & Smith, 2014). In line with a relative approach to establishing trustworthiness, a critical friends process was utilised to encourage reflexivity (Cowan & Taylor, 2016; Smith & McGannon, 2018). The process involved a critical dialogue with two senior researchers (AH, SC) who read the transcripts, reviewed the themes and listened to the rationale provided by the first author and offered critical feedback in relation to the interpretations of the researcher (Smith & McGannon, 2018). This process led to the refinement of themes through challenging the initial interpretation of the lead researcher which would then lead to either finding greater evidence to support the initial interpretation or reviewing and refining the theme to better reflect the evidence. A critical friends approach was used in favour of other methods of strengthening credibility and trustworthiness, such as member checking, due to the nature of the participant sample. It was not logistically possible to complete member checking in this instance and so a critical friends approach constituted the most feasible method of ensuring methodological quality in this instance.

Findings

Two main themes were identified as central to the experiences of on-time maturing ballet dancers growing up in dance: A right and a wrong way to grow, and fitting in and moving forward.

A Right and a Wrong Way to Grow

Alongside perceived benefits, on-time dancers experienced challenges relating to growth and development. Many of these challenges were aesthetic, including peer comparison, the notion of acceptable and unacceptable changes at puberty, the importance of timing, order and extent of physical changes, feeling judged and lack of teacher accommodation or understanding of physical change.

Peer comparison. Peer comparison was an aspect highlighted by many on-time dancers in their experiences of puberty. On-time dancers experienced being among the first of their friends to begin physical development despite being ‘on-time’ in development terms. They described comparing themselves to peers not in terms of functional capacity but in terms of body shape and size.

On-time dancers compared their relatively more adult body shapes to the pre-pubescent bodies of their later maturing peers: ‘...it is a bit scary. You just look at yourself and you’re looking at someone next to you and you’re like, “Oh, I don’t look like them”’. (OT22, age 15)

Definitely maturing one of the first in my year, it can put you down, when you’re in a class full of a load of really skinny people who haven’t started developing yet. I’ve got quite an ‘adulty’ shape already. It’s kind of depressing sometimes, but you get over it.

OT20 (age 14)

They described how this feeling of being different also impacted upon their feelings of confidence, self-consciousness and subsequently on their dance performance.

I felt self-conscious and I wasn’t too keen on wearing a full leotard as much as just I felt I was like, ‘Oh, I’m really different than all of my other friends’, like because they were still very skinny and childlike and I was a bit more matured. So I was a bit self-conscious and just, kind of, lost a lot of the confidence in my dancing and I was like, ‘I just don’t look right to do this, what’s going on?’ You know, I just wasn’t really sure about what I wanted to do.

OT22 (age 15)

Comparison of body shape and size with peers was described as something which could make you feel good, if you were skinnier than your peers and bad if they were skinnier than you. This notion of the importance of peer reference groups was important to a number of the on-time dancers who had peer groups both in dance and outside of dance.

Well, there’s a girl at my ballet school, and she’s smaller and she’s much thinner than me, and I always compare myself to her, but then there’s girls at my school that I’m best friends with and they’re much bigger than me, so then I look great compared to them... But it really depends on who’s around you, what they’re looking like. If they’re much bigger than you then you feel good as well.

OT25 (age 14)

While most of the dancers reported more than one reference group to be beneficial, one dancer described it as confusing:

I'd say one [perspective] would be better because then you'd know exactly how you feel about your body... And like everybody has the same opinion on it. So at dancing you've got the image of being like the classical ballerina, or the skinny, skinny, and then at school you're, kind of, just like a bit different... So you're, kind of, confused, you're like, 'Do I fit in here? Do I fit in here?' You just don't know... so I'd say having one perspective would be better than two.

OT22 (age 15)

Acceptable and unacceptable changes. When describing changes at puberty, on-time dancers described acceptable and unacceptable physical changes: growing taller (but not too tall) is good, but other pubertal changes which take you away from a more pre-pubescent physique, such as breast development and widening of the hips, were described as negative. Often these expectations were believed to be set by the teacher or school:

Well, it can be a bad thing if you develop the way that your teachers think you wouldn't. So if you develop in a way that you're not fit to do ballet anymore then that's bad. But if you develop in a way and you kind of stay the same, then it's good...

OT22 (age 15)

Acceptable or ideal physical changes were described as staying as close to the pre-pubescent figure as possible, it was also described as acceptable to become taller and more muscular. '[Staying] More or less the same, yes. Or you've changed and morphed into more of an adult ballet dancer than a child ballet dancer... You get a bit taller, a bit more muscular, just that kind of stuff'. (OT22, age 15)

Unacceptable changes at puberty were described as those which move you away from a more pre-pubescent physique: 'Maybe like over growing in the chest or your legs become too big, hips are too wide. All that kind of stuff. Just - ... You just don't look right doing ballet'. (OT22, age 15)

These types of physical development were viewed as make or break for a career in ballet: 'Like, if I grow a lot taller, then maybe I could do ballet. I want to do ballet... Yes, and I need to get taller and not any wider'. (OT28, age 13)

'I was, kind of like, "Oh, I don't have the body to dance'. I felt like weight had gone on in different areas. It didn't help that I had an injury at the time so I wasn't doing any exercise, I wasn't able to dance. So I was looking at myself, I

was like, ‘Oh, what’s going on here?’ And I was like, ‘This is, I can’t dance anymore’.

OT22 (age 15)

On-time dancers were clear that different physical changes had different social values:

When my legs started growing I was happy...I have to say I was quite excited when I got my period because I was, like, grown up. But I do look back on how much of a pain it is. And, definitely, the breast development and growth – that really annoyed me and it still does... you just feel a bit out, and then you do look at the ballet body and the primas and you get a bit down.

OT26 (age 16)

For peers in jazz dance, breast development was perceived very differently:

When I did get breast development all the, kind of, jazzy people if they didn’t have it, they were like jealous of me. They were always saying, ‘Oh, I want that, just for jazz’. And I was kind of, ‘No, because of ballet’. You can’t take them away.

OT26 (age 16)

Tempo and order of changes. The tempo and order of physical changes was highlighted by on-time dancers as important. Dancers associated the tempo, more specifically fast growth, with injury, time away from dancing and functional implications ‘I just feel like, because I feel I am growing a lot faster, and I am getting less flexible so I have to work even harder to–get my flexibility ...’. (OT24, age 13)

...my bones were growing too fast and my muscles were getting stretched and then it was up in my back and down in my knees and it was horrible... Yes. It was about over a year that everything had happened so I wasn’t dancing really for a year.

OT22 (age 15)

The order of physical changes was also experienced as problematic for young dancers. For example, experiencing breast development but little growth in height, though temporary, was a negative experience:

...you can grow and really elongate it and things. But I would say definitely for myself, you do begin to get breasts. I filled out when I went through puberty... For myself, it was a negative thing... Well I used to be quite short and, I guess, in proportion. But, yes, bits of my body didn't grow at the same time as others. My legs didn't grow but then my chest got bigger. But now it's, hopefully, balanced out.

OT26 (age 16)

Feeling judged. On-time dancers described feeling judged by peers or teachers regarding physical changes at puberty. 'Like kind of getting judged constantly on how skinny you are, either way, whether you're a dancer or not, whether it's by your teacher, a panel or your friends... So you are always judged no matter what you do basically' (OT22, age 15) and 'I remember at the start when I started having puberty I felt quite judged by the teacher. I don't think she was but, because you did see yourself differently, so you were wondering if she saw you differently'. (OT26, age 16)

This feeling was described as being accentuated by the dance environment and attire, having to wear leotard and tights.

...everyone can see everything but at school you've got your uniform on and no one knows what's going on underneath it, but then, at dancing you're stripped back, just in your leotard and tights, and everyone can see everything, so it's quite, like, 'judgy' in that way...

OT25 (age 14)

Interaction with the teacher and dance environment. Dancers' interactions with their teachers and the dance environment were highly significant to on-time dancers. In addition to feeling judged, dancers reflected that their interaction with the dance teacher was characterised by a lack of consideration for pubertal change and subsequent lack of accommodation of physical differences. Where the physical change of dancers did not align with dance teacher expectations, dancers perceived a lack of support and understanding from their teachers.

Some dancers noted that dance teacher expectations suggest a lack of consideration or understanding of individual differences:

Sometimes in class the teacher can compare what you do to other people. Sometimes without meaning it, really. Sometimes they can go, 'You've got to move your legs as fast as so-and-so', or, 'You need to jump higher than so-and-so'. Sometimes, if you've got a different, well, everyone has a different body

shape, then that thing is... it's harder, so then you're just like, 'Argh!' It's really hard.

OT20 (age 14)

Dancers also perceived a lack of understanding of pubertal changes relating to teacher expectations of physical function and capacity. For example, the expectation that having long legs should relate to greater jump height and distance. However, rapid growth in limb length is likely to disrupt coordination in the short term (Daniels et al., 2001) and such expectations were perceived by dancers as unfair at this point in training.

Well, they will say, 'Oh, you have got really long legs, you should be able to jump across the room', and stuff like that, which sometimes makes me feel like others are not trying hard enough, because they think that I have just got naturally long legs that I'll be able to, like, jump really far...

OT24 (age 13)

Dance teachers also used indirect interactions to negotiate changes at puberty, for example, subtle suggestions to increase fitness, which young dancers inferred as a hint to get into 'better shape':

'They could be like, "You need to be more fit. You need to keep running"'. You need to do all that kind of stuff, just like work out more, because they're making a subtle hint that you need to sort yourself out basically. As hard as it is, they try and say it subtly but you know exactly what they're trying to say to you.

OT22 (age 15)

Fitting in and Moving Forward

Dancer's perceived benefits to being on-time relating to fitting in and moving forward with their dance training. Dancers described a sense of 'fitting in', having time to adjust to changes and were also able to see puberty as an opportunity. Utilising social support and acceptance and reassurance were highlighted as factors which facilitated dancers in moving forward.

Fitting in. A sense of 'fitting in' and being in sync with their peers enabled many on-time dancers to feel confident and 'normal' as they experienced changes at puberty: '...it feels good, yes, because you know that you are growing and you are fitting in with other people as well' (OT27, age 12), 'We are not small or we are not tall; we are like in between and we are like, "Yeah" because we fit in with

everyone and things, no one makes fun of us because we are small or tall, so that is quite good, we get to fit in' (OT27, age 12) and 'Yes, it is nice being at the same time not like after, or before anyone'. (OT24, age 13)

Time to adjust. Having time to adjust to changes at puberty was seen as a benefit of maturing a little earlier. Dancers related this specifically to readiness for auditions:

It was a bit embarrassing but I've, kind of, came out and everything has all evened out now so it's okay... I think it's better to mature a bit earlier just so you can get comfortable, you know, at an earlier stage and you know exactly how your body works and you know what you can and can't do... Instead of like... you could have a growth spurt like a week before your audition and you're like, 'Oh, my goodness, what do I do?' And like your arms are too far away from the barre and stuff.

OT22 (age 15)

The benefit of having time to adjust was also related to knowing your body and getting comfortable with your body.

Well, I've already gone through it all so now I can just focus on what I've got and focus on other things, whereas other people who haven't started, they've got so used to what they've got and suddenly it will all change for them. I'm more mature so they can notice it more, I guess, so that must be harder for them. So I guess it's easier for me because I know what I've got for the most of my life with dance now, so I can just focus.

OT20 (age 14)

Puberty as an opportunity. Lastly, on-time dancers described puberty as an opportunity. Some dancers were able to see these changes as a way to improve and move forward with their dancing, experiencing puberty relatively earlier, providing them with time to adjust to physical changes and enabling them to capitalise on opportunities for improvement.

I think you can only get better and if you start like growing and stuff I think that's the only way you can get better, is if you keep like practising and stuff and try and work at it. Because, like I said, I was growing so much I was getting a lot tighter and stuff, so I tried to get my flexibility back and I think like... Yes, I just think it's really positive.

OT21 (age 13)

Psychologically, dancers were able to find ‘silver linings’ associated with experiencing some of the challenges of puberty, such as growth-related injuries, and reflect on these experiences as something which helped them to improve.

I feel like there is a good side to it because it could also help you improve. I know another person who’s had loads of injuries and stuff with growing, but I think that’s probably what made me better, because it makes you want to work harder, because obviously you’re off balance and you’re not as good in turnout so you want to improve. And I’ve like been getting a lot of extra help because I know I’ve been growing so much so...

OT21 (age 13)

Utilising social support. On-time dancers outlined important factors for coping with change at puberty and moving forward. These included social support from peers and parents, supporting others and seeking support from older peers.

Social support was perceived as very important by on-time dancers as a way in which they were able to manage and cope with their experiences of change at puberty. Dancers described a broad range of social networks to which they had access, including same age peers, older peers and parents and teachers. Many of their experiences described giving support, as well as receiving it.

...it’s just the fact that you can help others and be certainly more confident and make them confident because I’m not really one who is like super confident but I think I’ve now just got like a lot of more open about things because I’m one of the first and I should really be helping my year through it and stuff.

OT21 (age 13)

Acceptance and reassurance. Reassurance from peers, parents and teachers was an important part of coping with changes at puberty. Many dancers described seeking reassurance of their future in ballet and of their changing body. ‘Just obviously in your own head you think, “Oh, goodness, I just don’t look right at all.” But the others see it differently, they’re like, “No, you’re actually okay”’. (OT22, age 15)

Acceptance of physical changes appeared to be closely linked to receiving reassurance from significant others and from the system itself. Still being at the school (i.e. not being selected out of training) was seen as reassurance that they should still be there. On-time dancers also described their role in reassuring others as they were beginning to go through puberty.

'You're here for a reason so like if you weren't right then you wouldn't be here'. And I've had many conversations with other teachers and they've been like, 'Well, this teacher said this so this must be true'.... You know, like just constant reassurance of... That I'm okay.

OT22 (age 15)

Discussion

Very few studies to date have specifically discussed dancers who mature on-time (Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1985). Existing research suggests that maturing on-time in the context of ballet is associated with similar disadvantages to those who mature early (Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1985). The findings of this study suggest that the experiences of on-time dancers are distinct, and though there are some similarities regarding the disadvantages of early maturation outlined in Brooks-Gunn and Warren's work, there are important distinctions to be drawn.

Much research and the majority of conceptual models focus on individuals at the early or late extremes of maturity timing (Allison & Hyde, 2013; Brooks-Gunn & Warren, 1985; Ge & Natsuaki, 2009; Ge et al., 2011; Iversen, 1990; Summers-Effler, 2004). The individuals interviewed in the on-time maturity group experienced puberty around the average time for ballet cohorts (around age 13.2 years); while this may be considered late in non-dance cohorts, this is average for young ballet dancers.

Young, on-time dancers in this study experienced both benefits and disadvantages associated with their maturity timing. Direct effects, such as physical and functional changes associated with the tempo and timing of puberty were mentioned. Dancers perceived fast growth spurts to be associated with injury, loss of flexibility and for some time away from dance. However, on-time dancers mostly described their experiences in terms of indirect effects of puberty, such as perceptions of acceptable and unacceptable physical changes, feelings of fitting in and not fitting in and interactions with the teacher and/or dance environment.

Identity development is a key task of adolescence, with social and peer context playing a significant role (McAdams & Olson, 2010). Comparison to peers aids individuals in making sense of who they are and how they fit in the world (Adams & Marshall, 1996). Although these dancers matured on-time, their maturation is still relatively early compared to their later maturing peers, who are often in the majority within vocational dance education (Brooks-Gunn & Warren, 1985; Hamilton et al., 1997). For many on-time dancers, their relatively early physical maturation led to peer comparison, with dancers comparing their physically more developed bodies to the 'childlike', 'skinny' bodies of their later maturing peers. Peer comparison was facilitated by

features of the ballet environment such as attire and use of mirrors. Young dancers linked this to subsequent experiences of loss of confidence and greater self-consciousness. This aligns with the existing theory that on-time maturation may be perceived, relative to one's peers in ballet, as early (Brooks-Gunn & Warren, 1985). Kretsch et al. (2016) describe this as a peer contrast effect; a negative bias whereby individuals have a distorted perception of one's actual pubertal timing due to the actual, observable reference point being skewed (Kretsch et al., 2016).

While the dance students within each school participating in this study were exposed to the same ballet context, there is of course potential for variation in terms of how early, late and on-time dancers perceived their learning environment within that context. The findings of this study highlight perceptions of thinness related learning and ego-oriented climates as particularly salient for on-time dancers (Annus & Smith, 2009; de Bruin et al., 2009). Further research is needed to consider why on-time dancers may be particularly sensitive. Initial findings are in line with theories posited in existing research, suggesting that on-time and late maturing dancers will differ more than on-time and late maturing non-dancers; the late maturing dancers exhibiting more desirable physical and psychological attributes than those who are on-time (Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1985). This comparatively greater discrepancy between on-time and late maturing dancers may amplify perceptions of less desirable body shape and size relative to peers who are very delayed in maturity.

Rather than focussing on comparison of functional capacity, such as flexibility, on-time dancers' descriptions of peer comparison focused on body shape and size, being 'bigger' than peers and comparing the size of particular body parts, such as the legs and chest. Peer comparisons were based on notions of acceptable and unacceptable changes at puberty; on-time dancers described very clear ideas of positive and negative physical developments. Physical growth in height was a positive development, though extent of growth in height was also described as important; on-time dancers subscribed to the notion of a 'perfect height'. In some cases, menarche was also seen as a positive development, a sign of being 'normal' and 'healthy'. Conversely, on-time dancers perceived normal pubertal changes, which moved them away from the ideal of a more pre-pubescent physique, as negative; staying more or less 'the same' was perceived as good and physical developments, such as widening of the hips and breast development, as negative. These perceptions of acceptable and unacceptable physical characteristics align with ballet body ideals (Foster, 2003; Mitchell et al., 2016; Pickard, 2013, 2015). The concept of positive and negative physical developments, specifically relating to puberty in ballet is underexplored. Existing research supports the contention that many normal developments of puberty, including widening of the hips and breast development are considered not to be conducive to a career in ballet

(Mitchell et al., 2016). Moreover, breast development has been associated with the termination of pre-professional ballet training in young dancers (Hamilton et al., 1997).

Aspects of pubertal development appear to hold particular significance for on-time dancers and the order in which developments take place was perceived to amplify or minimise this effect. For example, if physical developments, such as ‘filling out’ and breast development, take place prior to a growth spurt in height, this was considered to be particularly negative and the ‘evening out’ of this growth caused great anxiety. Such concern over these physical developments appears to be driven by the judgement or perception of significant others being seen as ‘right’ or ‘not right’ for ballet. While anecdotally this may be expected for all girls in vocational ballet training, however, there is a paucity of evidence to support these differences. Similar findings were reported for early maturing dancers but with less emphasis on the order of developments (Mitchell, 2018). The emphasis on the order in which developments take place was described as highly salient by on-time dancers which may be explained by the timing of puberty relative to the ballet training environment; whereby early maturing dancers experience the majority of physical change very early on in their training, at a point where there is arguably less pressure and demands are lower. Conversely, the time at which on-time dancers are likely to experience physical change coincides with important decisions about retention in the dance training system. Further research is needed to explore these nuances in more depth.

The social value of changes, such as breast development, was particularly salient. Dancers described ‘feeling judged’ by dance teachers, audition panels and/or peers. These feelings were amplified by features of the dance environment, such as mirrors and wearing leotard and tights. The social value of such changes and subsequently how an individual perceives those changes has been associated with negative psychosocial outcomes (Moore et al., 2016; Summers-Effler, 2004; Yuan, 2012).

Dancer perceptions of the social value associated with specific pubertal changes appear to be moderated by the dance teacher. In line with Mitchell et al. (2016), the experiences of on-time dancers suggest that notions of acceptable and unacceptable physical changes are driven by perceptions of teacher expectation and confirmed by interactions with the teacher. Teacher interactions described by on-time dancers appear to follow an indirect approach, whereby teachers infer the need for change based on pubertal development. For example, suggestions to increase fitness were perceived as suggestions to lose weight. In converse to the indirect approaches promoted in existing research, which seek to moderate the expectations of an ideal body, these indirect actions have the opposite effect (Mitchell et al., 2016). Equally, on-time dancers described it as negative to develop in a way your teachers did not think you would. In this sense, the opinion of the dance teacher is

fundamental to perceptions of positive or negative change at puberty. This provides support for the theory that dance teachers have a central role to play in terms of encouraging positive perceptions of self and physical change at puberty, pleasing the teacher being of the utmost importance to young ballet dancers (Mitchell et al., 2016).

Dancers also described positive experiences related to their maturity timing, such as fitting in, having time to adjust and viewing puberty as an opportunity. Dancers felt that they benefited from time to adjust to their changing bodies before critical training evaluations and auditions. They described having time to become comfortable with physical changes, getting to know how the body works and its limitations and, subsequently, being able to focus on their dancing. It is important to acknowledge that this was not perceived as a benefit to all of the on-time dancers and that perhaps this may be perceived more clearly as an advantage for on-time dancers who mature at the earlier end of the on-time spectrum.

On-time dancers were also able to view puberty as an opportunity, ultimately seeing growth as something they needed in order to improve in their dance training and in some cases, as an opportunity to attain particular assets, such as longer legs. This perspective contrasts with more widely espoused views of puberty as a threat for young ballet dancers and as a negative event (Mitchell et al., 2016; Pickard, 2013). How some on-time dancers are able to perceive puberty in this way warrants further exploration, as positive perspectives on puberty within the context of ballet are limited and have been shown to be important for psychosocial well-being in other contexts (Moore et al., 2016).

In line with findings from non-dance adolescents, dancers described the benefits of 'fitting in' and being in sync with peers (Crosnoe, 2011; Kornienko et al., 2016; Wallace et al., 2012). While this was an experience shared by many of the on-time dancers, perhaps more salient were their perceptions of not 'fitting in'. As aforementioned, dancers described experiences of peer comparison, particularly relating to body shape and size, in this sense they perceived significant physical differences from their peers, in stark contrast to the notion of 'fitting in'. While the experience of 'fitting in' in terms of physical development was not constant, on-time dancers perceived more consistent benefits in terms of social support. Due to the fact that some of their peers were experiencing puberty around the same time, on-time dancers perceived a high level of social support from same age peers, older peers and parents. Moreover, they described being able to offer support to their peers. Giving and receiving support was based around reassurance and acceptance of changes at puberty. Therefore, although dancers struggled with perceptions of physical difference from their peers, they were able to access support networks which could provide reassurance and facilitate acceptance of these changes. This is consistent with the Contextual Amplification theory, whereby strong

social support may moderate negative effects of pubertal change (Allison & Hyde, 2013; Ge et al., 2011).

Within this particular social context, where it is normative for dancers to mature late, those who mature on-time may experience the same psychosocial disadvantages as early maturing individuals in non-dance populations (Brooks-Gunn et al., 1989; Brooks-Gunn & Warren, 1985). The experiences of on-time dancers support the contention that maturing on-time within a ballet context may not be a particularly valued condition and may be, in some ways, analogous to early maturation in terms of psychosocial implications. In line with Brooks-Gunn et al. (1985, 1989), who reported poorer body image, perceptions of being 'heavy' and desire to lose weight in on-time dancers, findings from the current study suggest that peer comparison and concern over body shape and size are particularly salient in the experiences of on-time ballet dancers.

The findings of the current study support the contention that on-time dancers experience similar struggles to their early maturing counterparts (Brooks-Gunn & Warren, 1985), in terms of comparing their relatively greater physical development with their later maturing peers. The experiences of on-time dancers reflect a heightened sensitivity to their environment in terms of peer comparison, particularly in relation to body shape and size. Thus, on-time dancers experience both fitting in and not fitting in within their social context, the complexity of this relationship which is not catered to by existing models (e.g. Goodness of Fit Model and the Deviance Hypothesis).

The Deviance Hypothesis (Petersen & Taylor, 1980) holds that early and late maturers differ in their adjustment, as a result of their status relative to the rest of the peer group. Arguably, when applying this hypothesis to the context of ballet, on-time maturation, though objectively average, shares many of the disadvantages of early maturation. The Deviance Hypothesis does not account for the fact that on-time dancers may still be considered to deviate from the prescribed aesthetic ideals associated with late maturation. Maturing on-time may hold some advantages, but equally appears to be disadvantageous in the context of ballet. The complex nature of the dance environment, its demands and the timing of these demands, means that more than one maturity group, at different points in training, may hold considerable disadvantage. Further research is warranted to understand the complexities of on-time dancers' experiences across the developmental period.

Many models, such as the Deviance Hypothesis, assume only one reference group for these individuals, where many of the dancers in this study have more than one. Two of the schools involved in this study were mixed with 'normal' schools, whereby those dancers have separate peer groups who belong to dance and non-dance schooling. This was noted by several of the dancers as something which they found conflicting; with one reference group there is a clear set of ideals, but with more than one reference group ideals can

be confusing, with young dancers unsure how to feel about their bodies. For example, in one context an individual may be perceived as ‘too skinny’ and in another, ‘not skinny enough’. Each social context with its own meaning attached to different physical changes and subsequent positive or negative feelings (Pickard, 2013). This is the case for many young dancers who train non-residentially or in institutions linked to regular academic schooling and therefore is important to account for within models we apply to this context.

The hypothesis that negative effects of puberty are accentuated in contexts which are adverse, especially in early maturing girls (the Contextual Amplification Hypothesis, Ge et al., 2011), may have application for on-time maturing girls in the context of ballet. The experiences of on-time ballet dancers show sensitivity to expectations of the body within their social context. Their experiences suggest that this could be moderated by teacher and peer behaviours and the learning climate/environment. For example, teacher comments which infer a need to reduce body weight and teacher comments or aspects of the dance environment which facilitate peer comparison, appear to accentuate any negative effects of puberty. In contrast, social support and reassurance from significant others were highlighted as a factor which enabled dancers to accept physical changes at puberty and thus perhaps even to mitigate the negative effects of puberty. Further research is needed to substantiate these relationships.

Research into the psychosocial adaptation of gymnasts suggests that current models do not describe these particular groups where maturity timing has highly nuanced implications (Iversen, 1990). In order for existing models to facilitate our understanding of psychosocial adaptation specific to these individuals, existing models require adaptation, or alternative models with greater contextual sensitivity need to be developed (Iversen, 1990; Skoog & Stattin, 2014). Iversen (1990) highlights that such models should consider specific timing frameworks relative to the vocation (e.g. ballet or gymnastics) in the definition of maturation categories and a similar approach may be beneficial when considering the adolescent ballet dancer.

In order for a model to fully account for the implications of on-time maturation in the context of ballet, a more complex model is required. An integrated model which draws on the strengths of models, such as the Contextual Amplification Hypothesis and applies Iversen’s recommendations, such as adjusting the definitions of early and late maturation and the implications associated with them, would be of value (Iversen, 1990). A new model would need to accommodate several aspects: More than one ‘deviant’ maturity group; the social context and demands of elite ballet training at different stages; the social stimulus value of functional characteristics; simultaneous changes in maturity and social context; definitions of early and late maturation and consideration of the timing of development relative to peak performance. Developing a model which can be applied to contexts such

as ballet where the implications of maturity timing are highly nuanced will facilitate a greater understanding of maturity associated implications for young dancers and will help to build evidence and understanding in this relatively under researched group.

Future research should consider applying Iversen's recommendations, such as adjusting the definitions of early and late maturation and the implications associated with them (Iversen, 1990). Moreover, Skoog and Stattin (2014) integrated model combining peer socialisation and contextual amplification models may provide a good starting place for future research. The model seeks to specify both the theoretical mechanisms involved in the peer socialisation model and the contextual conditions during which peer socialisation is likely to occur. Models such as this which encompass how puberty affects behaviour or adjustment and recognise the social embeddedness of that adolescents' adjustment may be most appropriate (Skoog & Stattin, 2014).

Strengths and Limitations

The qualitative methods utilised in this study aim to develop a greater understanding of psychosocial adaptation to puberty through generating narratives surrounding each participant's experiences of growing up in dance. While narrative accounts are subject to researcher bias and rely on the accuracy of participant recall, they provide a lens through which interplay between different factors, biological, social and psychological, can be viewed more fully. It is acknowledged that using interviews to explore experiences of maturation, an inherently dynamic and constantly changing process, is limited. The interview method employed in this study may not have captured the dynamic nature of experiences as effectively as other methods. Future studies should consider longitudinal methods to document these experiences and to enable greater sensitivity in capturing the complexities of experiences across time.

This body of work focuses only on female dancers and therefore data are not generalisable to male dancers. The distinct differences in pubertal changes between females and males and the subsequent differences in measurement of pubertal status and timing necessitate consideration of each sex separately. In addition, within the social context of ballet, it is likely that overt changes for females have different social meaning and value compared to pubertal changes for males, and therefore experiences of puberty will likely be very different. It is acknowledged that similar research with males is also justified, though this was not possible within the scope of this study.

The data collected were restricted to UK dance schools with a ballet focus and therefore may lack generalisability to dance schools in other countries and cultures and to dancers whose focus is not ballet. This sample comprised only White participants; therefore, while the findings from this work are not generalisable across different ethnicities, this level of homogeneity in the

sample is necessary for IPA and aids the transferability of these findings to a similar population group (Smith et al., 2009). More research exploring role of ethnicity is warranted.

Although ballet dancers from age 11–17 years were interviewed for this study, this sample represents only those who have ‘survived’ the training system. These dancers, particularly the older individuals, have survived the training system and therefore represent a group who have either adapted to avoid selection out of training or who may have had existing physical or psychological traits which enabled them to be retained within the system. Therefore, the experiences of those who are not retained would be expected to be significantly different from the dancers in this study.

Conclusion

This study advances our knowledge of dancers who mature on-time, who are often overlooked, with the assumption that many maladaptive responses at puberty are only present in those at the extremes of early and late development (Allison & Hyde, 2013; Brooks-Gunn & Warren, 1985; Ge & Natsuaki, 2009; Ge et al., 2011; Iversen, 1990; Summers-Effler, 2004). In the context of ballet, on-time dancers, instead of perceiving themselves as ‘average’ and experiencing a relatively easy pubertal transition, described unique challenges associated with a fluctuation between fitting in and not fitting in within their social context. While findings support Brooks-Gunn and Warren (1985) assertion that maturing on-time in the context of ballet is associated with similar disadvantages to those who mature early, present findings suggest that the implications of on-time maturation are more complex; although there are similarities, they do not appear to follow the same trajectory as early maturing ballet dancers. Further research is warranted to understand the complexities of on-time dancers’ experiences and how they can be best supported.

Author’s Note

Research conducted at Department for Health, University of Bath, Claverton Down, Bath, BA2 7AY, United Kingdom. Siobhan B Mitchell, PhD, Department for Health, University of Bath, Claverton Down, Bath, BA2 7AY, United Kingdom, s.b.mitchell@exeter.ac.uk. Anne M Haase, PhD, Victoria University of Wellington, Kelburn, Wellington 6012, New Zealand, anne.haase@vuw.ac.nz. Sean P Cumming, PhD, Department for Health, University of Bath, Claverton Down, Bath, BA2 7AY, United Kingdom, S.Cumming@bath.ac.uk

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by the Economic and Social Research Council.

ORCID iD

Siobhan B. Mitchell  <https://orcid.org/0000-0002-4085-3898>

References

- Ackard, D. M., & Peterson, C. B. (2001). Association between puberty and disordered eating, body image, and other psychological variables. *International Journal of Eating Disorders, 29*(2), 187-194. [https://doi.org/10.1002/1098-108x\(200103\)29:2<187::aid-eat1008>3.0.co;2-r](https://doi.org/10.1002/1098-108x(200103)29:2<187::aid-eat1008>3.0.co;2-r)
- Adams, G. R., & Marshall, S. K. (1996). A developmental social psychology of identity: Understanding the person-in-context. *Journal of Adolescence, 19*(5), 429-442.
- Allison, C. M., & Hyde, J. S. (2013). Early menarche: Confluence of biological and contextual factors. *Sex Roles, 68*(1-2), 55-64. <https://doi.org/10.1007/s11199-011-9993-5>
- Annus, A., & Smith, G. T. (2009). Learning experiences in dance class predict adult eating disturbance. *European Eating Disorders Review, 17*(1), 50-60. <https://doi.org/10.1002/erv.899>
- Bond, L., Clements, J., Bertalli, N., Evans-Whipp, T., McMorris, B. J., Patton, G. C., Toumbourou, J. W., & Catalano, R. F. (2006). A comparison of self-reported puberty using the pubertal development scale and the sexual maturation scale in a school-based epidemiologic survey. *Journal of Adolescence, 29*(5), 709-720. <https://doi.org/10.1016/j.adolescence.2005.10.001>
- Brooks-Gunn, J., Attie, I., Burrow, C., Rosso, J. T., & Warren, M. P. (1989). The impact of puberty on body and eating concerns in athletic and nonathletic contexts. *The Journal of Early Adolescence, 9*(3), 269-290.
- Brooks-Gunn, J., Petersen, A. C., & Eichorn, D. (1985). The study of maturational timing effects in adolescence. *Journal of Youth and Adolescence, 14*(3), 149-161. <https://doi.org/10.1007/BF02090316>
- Brooks-Gunn, J., & Warren, M. P. (1985). The effects of delayed menarche in different contexts: Dance and nondance students. *Journal of Youth and Adolescence, 14*(4), 285-300. <https://doi.org/10.1007/BF02089235>
- Brooks-Gunn, J., Warren, M. P., Rosso, J., & Gargiulo, J. (1987). Validity of self-report measures of girls' pubertal status. *Child Development, 58*(3), 829.
- Buckroyd, J. (2000). *The student dancer: Emotional aspects of the teaching and learning of dance*. Dance Books.
- Carskadon, M. A., & Acebo, C. (1993). A self-administered rating scale for pubertal development. *Journal of Adolescent Health, 14*(3), 190-195.

- CDET. (2011). *The UK Guide to accredited education and training in dance and musical theatre*. Retrieved 7th May, 2020, from http://www.cdd.ac.uk/wp-content/files_mf/Vocational_Training.pdf
- Cowan, D., & Taylor, I. M. (2016). 'I'm proud of what I achieved; I'm also ashamed of what I done': A soccer coach's tale of sport, status, and criminal behaviour. *Qualitative Research in Sport, Exercise and Health*, 8(5), 505-518.
- Crosnoe, R. (2011). *Fitting in, standing out: Navigating the social challenges of high school to get an education*. Cambridge University Press.
- Cumming, S. P., Sherar, L. B., Gammon, C., Standage, M., & Malina, R. M. (2012). Physical activity and physical self-concept in adolescence: A comparison of girls at the extremes of the biological maturation continuum. *Journal of Research on Adolescence*, 22(4), 746-757. <https://doi.org/10.1111/j.1532-7795.2012.00821.x>
- Daniels, K., & Rist, R. (2001). The Challenge of the Adolescent Dancer. *Journal of Dance Education*, 12, 74-76.
- de Bruin, A. P., Bakker, F. C., & Oudejans, R. R. D. (2009). Achievement goal theory and disordered eating: Relationships of disordered eating with goal orientations and motivational climate in female gymnasts and dancers. *Psychology of Sport and Exercise*, 10(1), 72-79. <https://doi.org/10.1016/j.psychsport.2008.07.002>
- Ellis, B. J. (2004). Timing of pubertal maturation in girls: An integrated life history approach. *Psychological Bulletin*, 130(6), 920-958.
- Fairclough, S. J., & Ridgers, N. D. (2010). Relationships between maturity status, physical activity, and physical self-perceptions in primary school children. *Journal of Sports Sciences*, 28(1), 1-9. <https://doi.org/10.1080/02640410903334780>
- Foster, S. L. (2003). Dancing bodies. In J. C. Desmond (Ed.), *Meaning in Motion: New cultural studies of dance* (3rd ed.). Duke University Press.
- Gay, J. L., Monsma, E. V., Smith, A. L., DeFreese, J. D., & Torres-McGehee, T. (2014). Assessment of growth and maturation in female athletes at a single point in time. *Women in Sport and Physical Activity Journal*, 22(2), 76-82.
- Ge, X., & Natsuaki, M. N. (2009). In search of explanations for early pubertal timing effects on developmental psychopathology. *Current Directions in Psychological Science*, 18(6), 327-331.
- Ge, X., Natsuaki, M. N., Jin, R., & Biehl, M. C. (2011). A contextual amplification hypothesis: Pubertal timing and girls' emotional and behavioral problems. In *Understanding girls' problem behavior: how girls' delinquency develops in the context of maturity and health, co-occurring problems, and relationships* (pp. 9-29). Wiley Blackwell.
- Gibson, F. (2007). Conducting focus groups with children and young people: Strategies for success. *Journal of Research in Nursing*, 12(5), 473-483. <https://doi.org/10.1177/1744987107079791>
- Gluckman, P. D., & Hanson, M. A. (2006). Evolution, development and timing of puberty. *Trends in Endocrinology & Metabolism*, 17(1), 7-12.

- Graber, J. A., Seeley, J. R., Brooks-Gunn, J., & Lewinsohn, P. M. (2004). Is pubertal timing associated with psychopathology in young adulthood? *Journal of the American Academy of Child and Adolescent Psychiatry*, 43(6), 718-726. <https://doi.org/10.1097/01.chi.0000120022.14101.11>
- Hamilton, L. H., Hamilton, W. G., Warren, M. P., Keller, K., & Molnar, M. (1997). Factors contributing to the attrition rate in elite ballet students. *Journal of Dance Medicine & Science*, 1(4), 131-139.
- Harden, K. P., Mendle, J., & Kretsch, N. (2012). Environmental and genetic pathways between early pubertal timing and dieting in adolescence: Distinguishing between objective and subjective timing. *Psychological Medicine*, 42(1), 183-193. <https://doi.org/10.1017/S0033291711000961>
- Iversen, G. E. (1990). Behind schedule: Psychosocial aspects of delayed puberty in the competitive female gymnast. *The Sport Psychologist*, 4(2), 155-167.
- Jones, M. C. (1965). Psychological correlates of somatic development. *Child Development*, 36, 899-911.
- Kornienko, O., Santos, C. E., Martin, C. L., & Granger, K. L. (2016). Peer influence on gender identity development in adolescence. *Developmental Psychology*, 52, 1578-1592. <https://doi.org/10.1037/dev0000200>
- Kretsch, N., Mendle, J., Cance, J. D., & Harden, K. P. (2016). Peer group similarity in perceptions of pubertal timing. *Journal of Youth and Adolescence*, 45(8), 1696-1710.
- Lerner, R. M. (1985). Adolescent maturational changes and psychosocial development: A dynamic interactional perspective. *Journal of Youth and Adolescence*, 14(4), 355-372.
- Lyons, E., & Coyle, A. (2007). *Analysing qualitative data in psychology*. SAGE.
- Magnusson, D., Stattin, H., & Allen, V. L. (1985). Biological maturation and social development: A longitudinal study of some adjustment processes from mid-adolescence to adulthood. *Journal of Youth and Adolescence*, 14(4), 267-283.
- Malina, R. M., Baxter-Jones, A. D. G., Armstrong, N., Beunen, G. P., Caine, D., Daly, R. M., Lewis, R. D., Rogol, A. D., & Russell, K. (2013). Role of intensive training in the growth and maturation of artistic gymnasts. *Sports Medicine*, 43(9), 783-802. <https://doi.org/10.1007/s40279-013-0058-5>
- Malina, R. M., Bouchard, C., & Bar-Or, O. (2004). *Growth, maturation and physical activity* (2nd ed.). Human Kinetics.
- Malina, R. M., Rogol, A. D., Cumming, S. P., Coelho e Silva, M. J., & Figueiredo, A. J. (2015). Biological maturation of youth athletes: Assessment and implications. *British Journal of Sports Medicine*, 49(13), 852-859.
- McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, 61, 517-542.
- Mendle, J., Turkheimer, E., & Emery, R. E. (2007). Detrimental psychological outcomes associated with early pubertal timing in adolescent girls. *Developmental Review*, 27(2), 151-171. <https://doi.org/10.1016/j.dr.2006.11.001>
- Mitchell, S. B. (2018). *Health and Wellbeing in elite female ballet dancers: Implications of maturity timing* [Unpublished Doctoral thesis, University of Bath].

- Mitchell, S. B., Haase, A. M., & Cumming, S. P. (2020). Experiences of delayed maturation in female vocational ballet students: An interpretative phenomenological analysis. *Journal of Adolescence, 80*, 233-241. <https://doi.org/10.1016/j.adolescence.2020.03.005>
- Mitchell, S. B., Haase, A. M., Cumming, S. P., & Malina, R. M. (2017). Understanding growth and maturation in the context of ballet: A biocultural approach. *Research in Dance Education, 18*(3), 291-300.
- Mitchell, S. B., Haase, A. M., Malina, R. M., & Cumming, S. P. (2016). The role of puberty in the making and breaking of young ballet dancers: Perspectives of dance teachers. *Journal of Adolescence, 47*, 81-89.
- Moore, S. R., McKone, K. M. P., & Mendle, J. (2016). Recollections of puberty and disordered eating in young women. *Journal of Adolescence, 53*, 180-188.
- Patton, M. Q. (1990). *Qualitative research and evaluation methods*. SAGE.
- Petersen, A. C., Crockett, L., Richards, M., & Boxer, A. (1988). A self-report measure of pubertal status: Reliability, validity, and initial norms. *Journal of Youth and Adolescence, 17*(2), 117-133. <https://doi.org/10.1007/BF01537962>
- Petersen, A., & Taylor, B. (1980). The biological approach to adolescence: Biological change and psychosocial adaptation. In J. Adelson (Ed.), *Handbook of adolescent psychology*. Wiley.
- Pickard, A. (2013). Ballet body belief: Perceptions of an ideal ballet body from young ballet dancers. *Research in Dance Education, 14*(1), 3-19.
- Pickard, A. (2015). *Ballet body narratives: Pain, pleasure and perfection in Embodied identity*. Peter Lang.
- Rowe, D. C. (2002). On genetic variation in menarche and age at first sexual intercourse: A critique of the Belsky-Draper hypothesis. *Evolution and Human Behavior, 23*(5), 365-372.
- Seidman, I. E. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (2nd ed.). Teachers College Press.
- Shaw, R. (2010). QM3: Interpretative phenomenological analysis. In M. A. Forrester (Ed.), *Doing qualitative research in psychology: A practical guide*. SAGE.
- Sherar, L. B., Cumming, S. P., Eisenmann, J. C., Baxter-Jones, A. D. G., & Malina, R. M. (2010). Adolescent biological maturity and physical activity: Biology meets behavior. *Pediatric Exercise Science, 22*(3), 332-349.
- Skoog, T., & Stattin, H. (2014). Why and under what contextual conditions do early-maturing girls develop problem behaviors? *Child Development Perspectives, 8*, 158-162. <https://doi.org/10.1111/cdep.12076>
- Smith, J. A. (2003). *Interpretative phenomenological analysis, Doing Social Psychology Research*. London: Sage.
- Smith, J., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. SAGE.
- Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology, 11*(1), 101-121.

- Sparkes, A.C., & Smith, B. (2014). *Qualitative research methods in sport, exercise and health: From process to product*. Routledge.
- Stark, A., & Newton, M. (2014). A dancer's well-being: The influence of the social psychological climate during adolescence. *Psychology of Sport and Exercise, 15*, 356-363.
- Stice, E., Presnell, K., & Bearman, S. K. (2001). Relation of early menarche to depression, eating disorders, substance abuse, and comorbid psychopathology among adolescent girls. *Developmental Psychology, 37*(5), 608-619. <http://doi.org/10.1037/0012-1649.37.5.608>
- Summers-Effler, E. (2004). Little girls in women's bodies: Social interaction and the strategizing of early breast development. *Sex Roles, 51*(1-2), 29-44. <https://doi.org/10.1023/B:SERS.0000032307.16204.ec>
- Tremblay, L., & Frigon, J.-Y. (2005). Precocious puberty in adolescent girls: A biomarker of later psychosocial adjustment problems. *Child Psychiatry and Human Development, 36*(1), 73-94. <https://doi.org/10.1007/s10578-004>
- Wallace, T. L., Ye, F., & Chhuon, V. (2012). Subdimensions of adolescent belonging in high school. *Applied Developmental Science, 16*(3), 122-139. <https://doi.org/10.1080/10888691.2012.695256>
- Wiesner, M., & Ittel, A. (2002). Relations of pubertal timing and depressive symptoms to substance use in early adolescence. *The Journal of Early Adolescence, 22*(1), 5-23.
- Wilson, D. M., Killen, J. D., Hayward, C., Robinson, T. N., Hammer, L. D., Kraemer, H. C., & Taylor, C. B. (1994). Timing and rate of sexual maturation and the onset of cigarette and alcohol use among teenage girls. *Archives of Pediatrics & Adolescent Medicine, 148*(8), 789-795.
- Yuan, A. S. V. (2012). Perceived breast development and adolescent girls' psychological well-being. *Sex Roles, 66*(11-12), 790-806. <https://doi.org/10.1007/s11199-012-0138-2>

Author Biographies

Siobhan B. Mitchell, PhD is a postdoctoral research associate in Child and Adolescent Health at the University of Exeter within the Children & Young People's Mental Health Research Collaboration (ChYMe). Researcher on several intervention studies based around improving social and emotional development in young people. Siobhan's research interests focus on child and adolescent health and development, growth and maturation in performing arts and sports contexts, biocultural approaches to adolescent development and mediated effects models of adolescent adaptation with an interest in health risk behaviours.

Anne M. Haase, PhD, is an Associate Professor of Health Promotion at Victoria University of Wellington. Anne's research interests focus on individual and family-based theoretical interventions to lifestyle behaviour

change, including chronic disease-preventive health behaviours and the benefits of exercise and diet in mental health (depression, eating disorders).

Sean P. Cumming, PhD, is a Reader in the Department for Health at the University of Bath. Sean's research focuses on adolescent health and development, with particular emphasis on the processes of growth and maturation, and the development of school- and sports-based initiatives that encourage active and healthy living.