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**Understanding Overuse Injures in Rhythmic Gymnastics:
A 12-month Ethnographic Study**

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1 **Abstract**

2 *Objectives:* This study aimed to gain an in-depth understanding of overuse injuries in rhythmic
3 gymnastics from a psychosocial perspective. More specifically, it examined how sport culture impacts
4 overuse injuries.

5 *Design:* To develop an understanding of the culture of rhythmic gymnastics and gymnasts' behaviour
6 within the context of this culture, ethnography was the chosen method and written product of this
7 research.

8 *Method:* A 12-month ethnography was conducted in an elite rhythmic gymnastics club in Italy, with
9 43 participants, consisting of 16 gymnasts, three female coaches, one physiotherapist, 22 parents, and
10 the club's president. Eight qualitative methods of data collection were used to provide rigor and
11 depth. Following data transcription, a thematic analysis was conducted to identify the emergent
12 themes. Findings are presented using ethnographic creative nonfiction for ethical, theoretical and
13 practical reasons.

14 *Results:* Two stories were created portraying the same training session through the eyes of a gymnast
15 and her coach. The stories reflect the differences in the interpretation of the same situations and the
16 cultural norms, values and behaviours that influenced the occurrence and experience of overuse
17 injuries.

18 *Conclusions:* This study extends research on overuse injuries in three ways: (a) it honours athletes as
19 social agents by exploring the intersection between psychology and sociology, (b) it uses a rigorous
20 methodology to elicit a more in-depth understanding of overuse injuries, and (c) it adopts an
21 innovative form of representation to increase the accessibility of the findings to non-academic
22 audiences.

23 *Keywords:* qualitative inquiry, creative nonfiction, pain, youth sport, well-being, coach-
24 athlete relationship

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1 have been found to be prevalent across a breadth of age groups and competitive levels in
2 sport (e.g., Liston, Reacher, Smith, & Waddington, 2006; Stracciolini, Casciano, Friedman,
3 Meehan, & Micheli, 2015). Therefore, it is important that researchers seek to better
4 understand overuse injuries in order to enrich athletes' experiences of sport and the
5 environments they operate in. Lastly, overuse injuries can have undesirable short- and long-
6 term consequences for athletes. For example, researchers have found overuse injuries to lead
7 to early retirement and long-term chronic pain (e.g., DiFiori et al., 2014; Maffulli, Longo,
8 Gougoulias, Loppini, & Denaro, 2010), as well as physical growth disturbance and joint
9 deformity (DiFiori et al., 2014). Yet, despite these negative outcomes, it is surprising there is
10 such a dearth of research to help sport science and medicine professionals better understand
11 the occurrence and experience of overuse injuries. Understanding athletes' and coaches'
12 experiences of overuse injuries and the environments in which they occur will strengthen our
13 position as sport and exercise psychologists to explore the possibility for individual and
14 social change.

15 A few researchers have recently begun to explore overuse injuries from a
16 psychosocial perspective (e.g., Tranaeus, Johnson, Engstrom, Skillgate, & Werner, 2014; van
17 Wilgen & Verhagen, 2012). These studies observed overuse injuries to be dynamic and
18 complex, and not simply due to an overuse of the joint, muscle, or tendon. For example,
19 Tranaeus and colleagues (2014) and Van Wilgen and Verhagen (2012) used one-shot semi-
20 structured interviews and identified a number of non-physical factors related to overuse
21 injuries across various sports (e.g., indoor floor hockey, swimming, volleyball). These factors
22 included culture, stress, staleness, passion, and identity, which reinforces the importance of
23 considering both the person and the environment. Despite their contribution to the literature,
24 the studies concluded with the need for a greater depth of understanding of overuse injuries to

1 is constructed and subjective). Consistent with these philosophical beliefs and the aim of the
2 study, ethnography was the chosen methodology. Given ethnography seeks to develop an
3 understanding of a group's culture and of people's behaviour in the context of that culture
4 (Wolcott, 2005), it was deemed the appropriate method of inquiry. I, the first author, used
5 ethnography to gain a comprehensive understanding of overuse injuries in an elite rhythmic
6 gymnastics club. Founded in the 1980's, the club is based in Italy and is consistently among
7 one of the highest performance clubs within the country. For 12 months (September 2013 to
8 September 2014) I immersed myself in the club's environment, observing and talking to key
9 stakeholders and its members. Rhythmic gymnastics was the chosen sport for the following
10 reasons: (a) the gymnastics environment has been portrayed in previous research as being
11 characterised by the disciplinarian methods used by coaches to develop strong and
12 competitive gymnasts (e.g., Barker-Ruchti, 2008; Krane, Greenleaf & Snow, 1997), which
13 previous researchers have suggested might lead to overuse injuries (Tranaeus et al., 2014);
14 (b) a lot of attention has focused on understanding the demands of artistic gymnastics, with
15 little emphasis on rhythmic gymnastics; and (c) it was of personal interest to the first author
16 who was a former rhythmic gymnast and current coach.

17 As a white middle-class female, rhythmic gymnastics coach with 15 years of coaching
18 experience, and as a former gymnast myself (12 years retired), I shared a common cultural
19 background with the organization's coaching staff and with the gymnasts. Consequently,
20 these characteristics granted me an *insider status* and allowed me to take on the role of overt
21 participant observer (i.e., marginally participating in the activities of the community while
22 conducting observations; Hammersley & Atkinson, 2007). This status meant that I could
23 access people and situations, perhaps not available for someone considered an 'outsider'. The
24 challenge for me however, was to avoid issues of overfamiliarity (Hammersley & Atkinson,
25 2007). To overcome this challenge I adopted two strategies: (a) I kept a reflective journal,

1 which allowed me to critically reflect on my role as a researcher and on the research process
2 by making me self-aware of my own values, beliefs, thoughts, feelings and behaviours, and
3 how my positioning at the club may be impacting others, situations, and the social climate;
4 and (b) my co-authors acted as *critical friends* by asking thought-provoking questions and
5 discussing with me how I reached and interpreted my observations to make sure they were
6 fair and balanced. Questions included: “How have you come to that conclusion?” and “Is
7 there any other way of looking at this?”

8 **Participants**

9 Following University ethics board approval, the project was presented to the president
10 of the gymnastics club, who agreed to let me approach the club’s members. I held two
11 meetings, one with the staff (i.e., coaches and physiotherapist) and another with the club’s
12 gymnasts and parents. The purpose of the meeting was to outline the study and invite staff
13 and gymnasts to participate. All of the club’s personnel agreed to participate, providing
14 written informed consent. Specifically, 16 female gymnasts of which 4 were Espoirs (age 10-
15 11), 5 Juniors (age 12-14), and 7 Seniors (age 15 and older; $M\ age = 13.6, SD = 2.4$); three
16 female coaches ($M\ age = 30.6, SD = 6.6$; coaching experience $M\ years = 12, SD = 8.5$); one
17 female physiotherapist (aged 30); 22 parents (16 mothers, 6 fathers); and the club’s president
18 (male, aged 54) took part into the study.

19 **Data Collection**

20 I began my study with a broad research question aiming to develop an understanding
21 of overuse injuries in a group of Italian elite rhythmic gymnasts. Over time I narrowed my
22 research lens as themes emerged throughout the research process (e.g., pain normalization,
23 coach-athlete communication; Taylor & Bogdan, 1998). A number of methods of data
24 collection were used as the study unfolded. The first and main method was participant
25 observation. This method enabled me to gain an overall perspective of the environment and

1 to monitor, reflect and refine emergent themes. Observations were conducted three days a
2 week during training and competition (i.e., regional, national and international tournaments),
3 lasted three to four hours, and allowed me to look at transactions between coaches and
4 gymnasts, as well as among teammates, examining both verbal and non-verbal behaviours.
5 Moreover, my insider status also offered me a chance to witness episodes that took place
6 “behind the scenes” (e.g., in the changing rooms). Observations were recorded using field
7 notes, which contained an outline of what was observed and took the form of no more than a
8 few words to reflect emergent themes. These field notes were translated into more coherent
9 stories each evening in a research log, which provided a detailed account of the research
10 setting. The final research log consisted of 148 pages of double-spaced text.

11 After the first three months as a participant-observer, I wanted to elicit a deeper
12 understanding of the emergent themes. Based on recommendations in the literature (e.g., Ely,
13 1991; Krane & Baird, 2005), I decided to use interviews to learn how the participants
14 perceived and made sense of their situations. Interviews allowed me insight into a world
15 larger than the one I could observe through observation, and provided me with a deeper
16 understanding of the context and culture of the club’s organization. Both informal and formal
17 interviews were used. Informal interviews were unstructured, initiated when the opportunity
18 arose, and lasted from 1 to 20 minutes. In contrast, formal interviews were organised with
19 each participant and took place in the locker rooms. The questions within the interview-guide
20 emerged from my observations and reflections on what was needed to answer the study’s
21 aim. The guide opened with introducing questions to make the interviewee feel at ease (e.g.,
22 “When did you start gymnastics/coaching?”). The questions then focused on pain and injury
23 (e.g., “Have you ever been injured?”). Based on the participants’ responses, follow-up and
24 probing questions (e.g., “How did you cope with and manage your injury?”) were used
25 thereafter to respond to points that seemed worthy of being followed up. Through the follow-

1 up and probing questions, I also sought to understand how the participants viewed their social
2 world by varying the phenomena asked (e.g., values, beliefs, behaviour, formal and informal
3 roles, relationships, stories). Overall, the participants were provided with a great deal of
4 leeway in how to reply to the questions, which allowed room for topics of particular interest
5 to them to emerge. Twenty-five formal interviews were conducted with gymnasts ($N = 17$),
6 coaches ($N = 3$), the club's physiotherapist, and parents ($N = 4$). These interviews ranged
7 from 10 to 64 minutes ($M = 30.1$, $SD = 15$), and resulted in 137 pages of double-spaced text.

8 It is important to note that although in some cases the interviews were an effective
9 method of data collection, with some participants they were not. The younger gymnasts were
10 shy and only offered brief answers. To address this limitation, I used focus groups based on
11 previous reports suggesting that focus groups with children allow for richer discussions than
12 individual interviews, avoiding power imbalances between adult and child in one-to-one
13 situations (Heary & Hennessy, 2002). Four focus groups were conducted, three with
14 gymnasts and one with parents. The interview guide for the focus groups with the gymnasts
15 was developed in the hope of further exploring some of the emerging themes from
16 observations and individual interviews (e.g., "Can you define what 'pain' means to you?").
17 Specifically, the gymnasts were divided into their age categories for the focus groups. The
18 groups were made up of four to six participants, a size that is recommended for lively
19 discussions to develop and to avoid creating an intimidating setting (Krol, Sixma, Meerdink,
20 Wiersma, & Rademakers, 2014). During the focus groups, I fulfilled a number of roles: (a)
21 facilitating the discussion (e.g., asking questions, making sure everyone was involved in the
22 discussion, and summarizing emerging themes); (b) monitoring the discussion (e.g., listening
23 and prompting for more information); and (c) creating a permissive, non-threatening
24 environment to ensure everyone had the opportunity to express their own perspectives (Fern,
25 2001). While the focus groups with Senior and Junior gymnasts followed a more traditional

1 format with several questions (e.g., “Why do you keep training when your body hurts?”, “Do
2 you think there are ‘rules’ about dealing with pain and injury in the gym?”), the focus group
3 with the Espoir gymnasts accounted for their lower cognitive and linguistic development
4 (Hill, Laybourn, & Borland, 1996). Because children can become bored with verbal
5 conversations, a variety of formats were used during the focus group: a “trigger story” poster,
6 drawings, sentence completion, and role play (Hill et al., 1996). All the activities were
7 discussed so that the participants could explain what they had done and why (Hill et al.,
8 1996). A final focus group was conducted with the gymnasts’ parents to examine their shared
9 understanding of the injury process (e.g., “Do your daughters discuss their pain and injuries
10 with you?”, “How do they manage their pain and injuries at home?”). The focus groups lasted
11 between 80 and 100 minutes ($M = 92$, $SD = 7.9$), were audio-recorded and transcribed
12 verbatim, resulting in 108 pages of double-spaced text. Finally, the reflective journal played
13 an important role over the course of the ethnography to help me to critically look at my
14 assumptions (Hammersley & Atkinson, 2007; Silverman, 2011). I filled the journal in every
15 night following observations, interviews or focus groups, and it resulted in 44 pages of
16 double-spaced text.

17 **Data Analysis and Representation**

18 The data were analysed in two phases. First, from the standpoint of a story analyst,
19 and then from the perspective of a storyteller. The story analyst conducts a rigorous analysis
20 of narrative, using procedures and strategies to examine the story from an abstract perspective
21 (Smith & Sparkes, 2009). As a story analyst, I used a thematic analysis of narrative, which is
22 an analytic method seeking to identify patterns across the collected data (Braun & Clarke,
23 2006). I identified, analysed, and interpreted the content of the data set, to single out the
24 *whats* (i.e., the themes in the stories people tell). Specifically, following Braun and Clarke’s
25 (2006) procedure, first I familiarised with the data through the long immersion in the field

1 and the transcription and translation of all the verbal data collected. Second, I immersed
2 myself in the coding process, identifying initial codes and grouping them into bigger themes
3 when they related to similar ideas. Then, I chose labels for the themes so that they could be
4 representative of the participants' words. The co-authors reviewed the analysis and
5 challenged my interpretations over several meetings we held together. As a result of these
6 conversations, themes were discussed and redefined, according to the recursive nature of the
7 thematic analysis process (cf. Braun & Clarke, 2006).

8 Once the first phase was completed, I adopted the role of the storyteller. Unlike the
9 story analyst, storytellers consider the story to be an analysis *in* itself (Smith & Sparkes,
10 2009). That is, producing an analysis *in* storytelling means to move away from the analysis of
11 the story, showing rather than telling theory in and through the story (Smith, 2013). An
12 effective way to achieve this is by using a creative analytical process (CAP), through which
13 the process and the product of writing become deeply intertwined (Richardson & St Pierre,
14 2005). Among the numerous versions of CAP available, I opted to use ethnographic creative
15 nonfiction to represent the research findings (e.g., McMahon & Penney, 2015; Schinke,
16 Blodgett, McGannon, & Ge, 2016; Smith, 2013). The term nonfiction refers to the adoption
17 of techniques originally belonging to literary fiction (e.g., metaphors, dialogues) to represent
18 the data, and does not mean that facts reported are made up (Sparkes & Smith, 2014).
19 Theoretically, this allowed me to *show* theory, rather than just describe it, using different
20 creative writing strategies to conjure vivid images and emotions in the reader. From an
21 ethical point of view, ethnographic creative nonfiction allowed me to protect the identity of
22 the participants, without losing the rawness of real episodes (Smith, McGannon, & Williams,
23 2015). Finally, by offering an embodied, sensorial, and relational account of human lives it
24 can also reach multiple audiences, not only in the academic world, possibly producing a
25 stronger practical impact by affecting more people (Smith et al., 2015).

1 Spalding and Phillips (2007) distinguished between three different types of stories, or
2 vignettes: portraits (i.e., an account to represent participants' character and experience),
3 snapshots (i.e., descriptions of an observed situation), and composites (i.e., a mix of
4 experiences amalgamated in a single account). I chose to use composite to support the story
5 in the best way and protect participants' identity. In developing the stories, I used not only
6 the key themes from my findings, but also participants' own words from interviews, focus
7 groups and observations, as well as interactions and situations documented in my notes and
8 research log. Nonetheless, the events represented in the story do not follow the same order in
9 which the data were collected. I selected the events from the amount of data in order to
10 represent the key themes in the most effective way.

11 A relativist non-foundational perspective was adopted to judge the quality of this
12 study (Sparkes & Smith, 2009). In this perspective no social reality exists in an independent
13 way from a person's interests and purposes, and there are no universal criteria to judge the
14 goodness of a research (Sparkes & Smith, 2009). The criteria against which this research
15 should be evaluated are *characterizing traits* that influence judgement of a research's quality,
16 and are subject to re-interpretation and change over time (Sparkes & Smith, 2014). Based on
17 Sparkes and Douglas' (2007) guidelines, the following list of criteria aims to assist the reader
18 in the judgement of this study. As the product of a constructive process, involving the
19 collation of extracts from interviews, focus groups and observations, coherence is an
20 important notion that might be used. Do the stories provide the reader with a readable and
21 meaningful picture of the experience? Are the stories plausible? Are they credible in the way
22 they represent the different perspectives? Also, do these stories offer a new perspective, by
23 giving voice to characters often absent in the literature, like elite but young athletes? Do they
24 show empathy and respect for all the participants, and are the participants portrayed in an
25 ethically informed way? As for the contribution of the study to the literature, do the stories

1 advance our understanding of the overuse injury process? Do they allow the reader to learn
2 something from them? Do they resonate with the reader's experience, affecting him/her
3 emotionally and/or intellectually? Can the stories evoke the emotional dimension of the
4 participants' experience? And, do they invite dialogue and reflection by raising awareness
5 towards the phenomenon under study? It is with these questions in mind that the readers are
6 invited to approach the following two short stories, which portray the same situation from
7 different perspectives.

8 **Results**

9 **A Gymnast's Story**

10 "Come on", I shout inwardly at the bus driver. I can't be late!

11 With every turn of the wheels of the bus, my heart beats faster and faster. I can't stand
12 still, I keep hearing my coach's voice resounding in my head: "A 'good' gymnast is never
13 late for training". Finally, my stop! I pull the doors open, jump off the bus and sprint to the
14 gym. I push the changing room doors, and the familiar smell of sweat and smelly shoes hits
15 me. My second home. I get changed as quickly as possible, still out of breath from running
16 from the bus, with beads of sweat starting to form on my forehead.

17 Leotard on... Check! Toe-shoes on... Check! Hair tightly pinned back... Check! I'm
18 ready. I burst through the gym doors, and...

19 [Silence]

20 For a brief moment, all eyes are fixed on me. I stand motionless. The other gymnasts,
21 my friends, soon redirect their gaze and continue running. But, my coach, Trudy, stares at me
22 with her piercing eyes. Slowly, she raises her head to the grimacing clock towering over us. I
23 follow her gaze. The time: 15:03.

1 “Sally”, she shouts. “You’re late. You know what to do”. My shoulders slump and
2 my head drops, bowing to her authority as I walk to pick up the rope and start doing my 300
3 double-skips, 100 for every minute you are late.

4 “Come on Sally, get going, we don’t have the whole afternoon! And tuck those legs
5 up. Have you forgotten it’s the Regionals next week? Don’t you want to defend your title?”
6 shouts Trudy.

7 I start skipping. 1... 2... 3...

8 I feel the rope swishing through the air, keeping me cool as my body warms up. My
9 legs bounce up and down like coiled springs. My feet landing heavier and heavier on the
10 floor with each skip... 298... 299... and 300!

11 I bend forward, placing my hands on my knees. I try to catch my breath, while my
12 heart plays tug-and-war with my rib cage. “Oh no”, I say under my breath. “It’s back!” Soon
13 I start to feel the pain crawling down my spine. Clearly, it didn’t like all that heavy landing.
14 “Leave me alone”, I tell it. “I *need* to train!” My Mum wanted to keep me home today, but I
15 refused. It’s the Regional’s next week. A ‘good’ gymnast doesn’t miss a training session.

16 “Come on Sally, join your teammates now. Let’s get started. Hopefully you’ll
17 remember that training starts at 3 p.m. sharp”, says Trudy.

18 “Yes, but...”

19 “But, what? What excuse do you have?” shouts Trudy.

20 “It’s just that... there was so much traffic on the way here, the bus...”

21 “Well, you should have got the earlier bus. Right, if you are done now, I would like to
22 carry on with the warm up if that’s okay with you?”

23 I sigh and join my friends for the conditioning.

24 I pray to myself that Trudy will remember that my back has been hurting lately.

25 Although I’ve rested my back this week for the Regionals, as Trudy told me to, the pain is

1 still lurking around. I really hope it will go away soon. But I certainly don't feel like I can tell
2 her now, after I've turned up late. It's too easy to imagine the conversation in my head:

3 Me: "Umm, by the way Trudy, I also wanted to let you know..."

4 Trudy: "What now Sally?"

5 Me: "Umm... my back still hurts."

6 Trudy: "What do you expect me to say? Have a look around: everyone has back pain
7 here. It's part-and-parcel of doing gymnastics! You use your back, so it's normal if you feel
8 pain every now and then. This is not the time to turn into a whiner Sally, especially with the
9 Regionals next week. You haven't broken any bones, have you?"

10 Me: "Umm, no, I guess not"

11 Trudy: "So, come on! A 'good' gymnast would keep going."

12 I say nothing.

13 *****

14 "Okay, girls, in the centre, let's start with some body waves. And 1, 2, 3... Soften
15 your arms girls" says Trudy.

16 "Ouch!" I say under my breath. "Not again", I plead to the pain.

17 The pain starts shooting up through the left side of my back, as if wanting to prove
18 who is stronger, urging to stop me. I remind the pain that I am a gymnast, and I'll do what
19 any 'good' gymnast would do: I grit my teeth and smile.

20 "Now flex your body forward and stretch", Trudy continues.

21 "Ouch" I say, again. Wow, I hadn't realised how painful it is even bending forward!

22 "And now backwards... Sally, you are barely moving, come on!" shouts Trudy.

23 I knew she'd forget about my back pain. Should I tell her? But, what if she thinks I'm
24 just being a whiner and making up excuses? Worst of all, that I'm not a 'good' gymnast?

1 breath, do some rolls on the arms, resisting the urge to stop and just curl into a foetal position
2 on the floor. I fight the urge to cry. Trudy doesn't like criers. I want to tell her about the pain
3 that's taking over my body. I can't do the ball routine. But I'm scared. I know Trudy, what if
4 she thinks I don't care about the competition, or about gymnastics anymore? I quickly wipe
5 my tears, hoping she hasn't seen me. Oh come on Sally, I say to myself. Get a grip! Everyone
6 has back pain, but everyone keeps training. You know it. It's *just* pain.

7 "Come on Sally, it's your turn again" Trudy's icy voice interrupts my thoughts.

8 I look at her. Arms folded. Eyebrows raised. "Have you prepared your ball routine?
9 To me, it looked like you were doing nothing there. Let's see if you are ready to perform it
10 with music."

11 Perfect. She saw me slow down when practicing, and now she's angry. Great start,
12 Sally! You should have learnt there is no place for stopping during training. Now at least try
13 to perform well, or you'll never hear the end of this. I scurry onto the carpet and take my
14 starting position.

15 [Music starts]

16 I go through my routine, performing every movement. The longest 90 seconds of my
17 life. With every passing second, the pain keeps sending burning sensations through my body.
18 My back feels stuck. It doesn't matter. I must continue. I throw the ball – just too long – and
19 lunge forward to catch it.

20 "Just catch it, please catch it!" I say to myself.

21 The shot of pain is so sudden and intense that for a moment everything around me is
22 black. I can feel millions of daggers penetrating through my spine. When I see again, the ball
23 is bouncing away from me. I must have dropped it. Pain is everywhere. Overwhelming.

24 "Sally, focus!" Trudy's voice interrupts the moment.

25 "Keep going", I tell myself "Just ignore it!". I grit my teeth harder.

1 I need all my mental energy to steady myself and continue my routine, keep moving,
2 keep doing all the elements and throws. It's too much.

3 Another throw. Another drop.

4 [Music stops]

5 I reach for the ball, but it rolls away mercilessly off of the carpet. Despite finishing
6 without my ball, I smile wide, as a 'good' gymnast would do at the end of a routine.

7 Soon, my smile turns into a frown. The music is over, the mask comes off. I don't
8 want to look up. I don't want to hear Trudy's comments. Tears well up in my eyes, but I try
9 to fight them by looking up towards the lights, willing them back inside. "Don't cry. Please
10 don't cry. Don't let Trudy see you cry. Just walk off the carpet and pick up the ball", I tell
11 myself.

12 But hot tears start to stream down my face. I act quickly to try to wipe them away, but
13 my efforts are futile. The gymnasts closest to me see my tears and I sense they feel my pain. I
14 can see in their eyes the desire to help, sharing a look that also tells me they can't, and they
15 continue to practice their own routines.

16 Slowly, I manage to get to my feet. I turn to Trudy.

17 "Oh, come on Sally! Not tears again! What's your excuse now? Are you in pain
18 *again?* You look fine to me", shouts Trudy.

19 I say nothing.

20 "What's wrong with you? I bet if you had caught those throws, you wouldn't be
21 crying. Don't you want to win next week and defend your title? Don't you want to win for
22 yourself and your club? I really don't have time for this. Right, who's next?"

23 She turns her back to me. I walk off of the carpet. Tears continue to stream down my
24 face. My body is shaking from the pain. I want to scream. I want to shout. I want Trudy to

1 understand the pain. I want her to know how much I care about the Regionals. I just don't
2 know *how*. I don't think I can.

3 I say nothing.

4 After all, that's what a 'good' gymnast would do.

5 **A Coach's Story**

6 I look up at the clock on the wall: 14.59.

7 "Where is Sally?" I say to myself. How many times do I have to say that they have to
8 be on time? *I* would have never been late for training when I was competing. As we all know,
9 a 'good' gymnast is never late. If only these girls would realise how much training they have
10 to do to be the best! There's not even enough time when they are punctual. And, if they start
11 arriving late, I will never be able to do everything we need to! As for Sally, she has Regionals
12 next week. How can she be late? Argh! It's so frustrating.

13 I look at the clock again: 15.00.

14 "Okay girls, run 10 laps around the gym to start" I say.

15 Suddenly, I hear the doors in the changing room slam open. A few minutes later, Sally
16 bursts into the gym with a worried look on her face. I want to shout at her. I want her to
17 understand how she's letting herself down, letting the club down, and letting me down! *I*
18 would have given anything to have her talent when I was her age. I don't want her talent to
19 go to waste. Why can't she understand?

20 I decide to stare at her and say nothing. As she looks at me, I slowly raise my head to
21 the clock. The time is 15.03. I turn back to her. She looks at me.

22 "You are late. You know what to do", I say.

23 I see her shoulders slump, while she bows her head and walks to pick up the rope. I
24 quickly remind myself, it's the only way she'll learn. I don't particularly enjoy punishing my

1 gymnasts, especially the hard-working and talented ones like Sally, but, that's what we did in
2 my day, and it's the only way they'll become 'good' gymnasts.

3 "Come on Sally, get going, we don't have the whole afternoon! And tuck those legs
4 up! Have you forgotten it's the Regionals next week? Don't you want to defend your title?" I
5 shout.

6 While Sally starts skipping and her teammates keep running, I check the training plan
7 for next week. Once again, we have to cut training short for a school show! It's so frustrating.
8 Argh! Politics! I need to make sure my girls won't suffer from this setback, and it won't
9 affect their preparation for the Regionals. We are defending several titles. It's so important
10 for the club's reputation to remain at the top, which I keep getting reminded by the club's
11 president!

12 The girls finish running and walk to the carpet. The only noise I can hear is Sally's
13 rope swishing through the air, and her feet landing heavier and heavier on the floor. I wished
14 she'd hurry up. Finally, she finishes and bends forward, with her hands on her knees, trying
15 to catch her breath.

16 "Come on Sally, join your teammates now. Let's get started. Hopefully you'll
17 remember that training starts at 3 p.m. sharp", I say.

18 "Yes, but..." Sally mumbles.

19 "But, what? What excuse do you have?" I shout.

20 "It's just that... there was so much traffic on the way here, the bus..."

21 "Well, you should have got the earlier bus. Right, if we are done now, I would like to
22 carry on with the warm up if that's okay with you?"

23 I can't believe how cheeky these gymnasts are sometimes. *I* would have never got
24 away with answering back to a coach in my day.

25 Sally looks at me, sighs and walks towards her teammates.

1 Oh my God, today is a nightmare!

2 I had planned a packed training session, with lots of routines with music for each of
3 the girls, due to the Regionals. But everything seems to be going wrong today! Some of my
4 younger gymnasts have started crying, whilst the older gymnasts are complaining of pain
5 here and there. Why won't they just help me? Can't they see there's only one of me? I need
6 more good gymnasts. I really don't have time for this. I can feel my levels of frustration
7 increasing, but I try to give the appearance of being in control. I tell the younger gymnasts to
8 toughen up and get back to training, and remind the older one's that injuries are temporary
9 and all in the mind. Even when it's a more severe injury, I try to teach my gymnasts that even
10 if they need to modify their routines, they need to keep going, *we* need to keep going,
11 because gymnastics doesn't stop.

12 I look up to the clock, cruelly ticking on. Sigh! Where has that time gone? I say to
13 myself. All I want is one good training session, just one, where I can work with my girls,
14 watch their routines, and critique them to make them perfect! All the time taken up by a few
15 crying and whining about injuries, it's so frustrating! Even Sally is driving me crazy today.
16 She is just not focusing, too worried about the Regionals I suspect. Why can't anybody train
17 properly today? Why can't we just have one perfect session in preparation of the Regionals. I
18 really don't have time for this.

19 I look around the gym, and notice Sally rehearsing her ball routine. She stops and
20 turns away from me, and practices some rolls, as if she has all the time in the world! I can't
21 believe it! Rolls? Why is she practicing rolls? It's her body elements she should be working
22 on, and the risky throws with the walkovers. She knows she hasn't performed well in the
23 previous routines, and that's how she prepares for her last apparatus?

24 "Come on Sally, it's your turn again" I say, folding my arms.

25 Sally jolts to attention, and looks at me with a worried expression.

1 “Have you prepared your ball routine?” I ask, raising my eyebrows. “To me, it looked
2 like you were doing nothing there. Let’s see if you are ready to perform it with music.”

3 Sally says nothing, like normal, and simply scurries to the carpet, into her starting
4 position.

5 [Music starts]

6 Sally starts her routine. Straight away, I can tell something’s wrong. There’s no
7 energy. There’s no passion. She’s smiling, but her expression is distant. Where’s the artistry?
8 She can’t perform like this. “No! No! No!” I say under my breath. That won’t win the
9 Regionals, it wouldn’t even win the school competition! It looks as if she just doesn’t care
10 about what she’s doing. I am tempted to stop the music and just send her out, but I don’t,
11 hoping it’ll get better. She looks so serious. She’s not interpreting the music at all! Her eyes
12 are looking down, instead of up. She knows better than this. I can’t believe it. And now she’s
13 dropped the ball! Where’s my good gymnast gone? This is just what I need.

14 I can’t help myself. “Sally, focus.” I shout.

15 But nothing changes. I might as well have said nothing. She can’t afford to perform
16 like this, not this week! There’s no excuse for performing like this.

17 Another throw. Another drop. Unbelievable!

18 [Music stops]

19 The ball rolls away. Sally reaches for it, then stops.

20 Finally, this horrible performance has come to an end. Why is she smiling? I am
21 speechless. Even my best and most hard-working gymnast is unwatchable today! I can’t
22 believe it. The president will go crazy at me if we don’t retain her title.

23 And now she’s crying! OF COURSE! First, she doesn’t practice properly, then she
24 doesn’t focus, and now she cries!

1 did not embody mental toughness (e.g., disclosing pain, showing weakness) were punished
2 by doing additional training or by being dismissed by the coaches. In the club, the pressure
3 for results to remain at elite level resulted in the coaches maximising the intensity of each
4 training session and minimising any disruption. In turn, this led to a perceived lack of time
5 for reflection and meaningful dialogue with the gymnasts, which, combined with the
6 gymnasts embodying and exhibiting the club's values and norms, led early experiences of
7 pain to become exacerbated over time and ultimately led to overuse injuries.

8 This study resonates with and extends research on overuse injuries. In terms of the
9 socio-cultural values and norms, they are reflective of Nixon's body of research on the
10 'culture of risk' in sport. Nixon (1993) defined the concept of 'culture of risk' as a sport
11 culture that normalises pain and injury and glorifies those athletes who take risks with their
12 bodies (e.g., training or competing despite physical pain). In a culture of risk, pain is seen as
13 something that has to be accepted and endured in order to succeed, in line with the slogan 'no
14 pain, no gain' (Loland, 2006). Recent studies in the sociology of sport have further observed
15 the prevalence of the culture of risk in the 21st century, and in particular pain normalization
16 behaviours (e.g., Liston et al., 2006; Malcom, 2006). For example, Liston et al. (2006) found
17 that behaviours of non-elite rugby players are very similar to elite and professional ones.
18 More recently, Roderick, Waddington and Parker (2012) also identified several punishing
19 mechanisms in place at football clubs to encourage pain normalization behaviours. These
20 mechanisms included giving fewer free tickets for watching games, and 'inconveniencing'
21 injured players with different daily routines, planned to discourage players to stay injured.
22 The cultural norms and behaviours described in the previous literature resonate with the
23 findings in this study.

24 Embodying the club's elitist values and norms ultimately led the gymnasts to exhibit
25 certain mentally tough attitudes and behaviours. For example, if I want to win (i.e., elitist

1 value to ‘be the best’) I must display certain attitudes and behaviours (e.g., accepting pain
2 and pushing through the pain barrier), thereby making a strong connection between the club’s
3 social values and the way gymnasts should think, feel, and behave. Interestingly, this finding
4 is consistent with the mental toughness research in sport psychology, whereby mental
5 toughness has been portrayed as the key to ultimate success and used to describe successful
6 athletes (e.g., Gucciardi, Gordon, & Dimmock, 2009; Jones, Hanton, & Connaughton, 2002).
7 In Jones et al.’s (2002) conception, mental toughness is necessary for victory, whereas in
8 Gucciardi et al.’s (2009) description, mental toughness allows for the consistent achievement
9 of one’s goals. According to Caddick and Ryall (2012) however, making a connection
10 between elitist values and mental toughness is morally questionable. In the context of our
11 study, gymnasts are respected by coaches if they display certain attitudes and behaviours;
12 however, if athletes’ fail to adhere to the socio-cultural values and do not display appropriate
13 attitudes and behaviours, they are deprived of attention and considered to be ‘weak’ by others
14 and by themselves. In Sally’s story, it is evident she kept pushing herself through the pain
15 barrier to be successful at the Regional’s the following week, thereby demonstrating mental
16 toughness to herself and her coach. The cost of this mindset was to Sally’s physical well-
17 being, leading to increasing episodes of pain and then ultimately to an overuse injury.

18 Another interesting finding from the study is the lack of personal disclosure in the
19 coach-athlete relationship. Indeed, not only was personal disclosure not considered to be a
20 mentally tough behaviour, it was not encouraged by Trudy due to time pressure she was
21 under, and Sally already perceived how Trudy would respond. There are many research
22 articles that profess to the stress coaches are under (see Fletcher & Scott, 2010). Yet,
23 according to Jowett and associates (e.g., Lorimer & Jowett, 2009; Rhind & Jowett, 2012), if
24 we want develop effective coach-athlete relationships, communication is of paramount
25 importance. Lorimer and Jowett (2009) suggested that high levels of *empathic accuracy* (i.e.,

1 members of the coach-athlete relationship's ability to accurately infer the partner's feelings,
2 thoughts and behaviours moment-to-moment) are fundamental for successful social
3 interactions. These authors encouraged coaches to allot time for dialogue with their athletes
4 during training sessions, to maintain and develop an open communication in the relationship
5 (Rhind & Jowett, 2012). In Sally's and Trudy's story there is no time for dialogue, and this is
6 reflected in low levels of empathic accuracy. Sally thinks she knows what her coach would
7 say if she talked to her about her back pain and therefore decided against raising the matter.
8 From the coach's perspective, Trudy incorrectly perceives her gymnast's tears, her possible
9 pain and her poor performance as a consequence of pre-competition nerves. In the long run, if
10 the lines of communication are not opened, these misperceptions might impact not only upon
11 Sally's health, but also on the overall quality of the coach-athlete relationship (Jowett, 2009).

12 **Conclusion**

13 The purpose of this study was to gain an in-depth understanding of overuse injuries in
14 rhythmic gymnastics. In doing so, this study extends research on overuse injuries in three
15 ways: (a) it honours athletes as social agents by exploring the intersection between
16 psychology and sociology, (b) it uses a rigorous methodology to elicit a more in-depth
17 understanding of overuse injuries, and (c) it adopts an innovative form of representation to
18 increase the accessibility of the findings to non-academic audiences. In terms of accessibility,
19 the stories use everyday language compared to the academic terminology usually utilised in
20 scientific articles. By doing so, we hope these stories allow for an increased dissemination of
21 knowledge to athletes and coaches, which in turn can encourage them to not only stop, think,
22 and reflect on their own thoughts, feelings and actions, but also how they are influenced by
23 their socio-cultural environments

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