What do we mean by the term pelvic floor?

Jenny Wickford, Julian Baker

This paper is based on a poster presented at the Low Back & Pelvic Girdle Pain conference in Antwerp Belgium, 29 October 2019: "*Is there such a thing as a pelvic floor?"*

In clinical practice, anatomy and research, the use of the terms 'pelvic floor' and 'pelvic floor muscles' to describe the internal pelvic region is common (1-7). The pelvic floor muscles generally described are the levator ani and coccygeus (1-3, 7). However, there is inconsistency in the terminology (2-3). For example, the term pelvic diaphragm is also used. Based on our extensive dissection and clinical experience, we want to join in the discussion of these terms in relation to what they may imply for our understanding of function, dysfunction and pain.

The words we use convey particular meanings. For example, years ago in Sweden the term 'chronic' in relation to pain or disease was strongly discouraged as it can hold negative connotations for the individual; it was replaced with long-term, or persistent. Similarly, the term pelvic floor can have an impact on our understanding of pelvic function. The term 'floor' implies a firm base and a definitive structure. What happens to individuals who understand their 'pelvic floor' literally as a floor, when that floor starts misbehaving? A floor doesn't generally have holes in it. A floor suggests a relationship to the upper body, but by omission not the lower body. This term is also reflected in how the pelvis is depicted. The images (drawings) of pelvic anatomy found in much of the literature gives an incomplete representation of the pelvis. Hence, what are possible connotations for us and our clients of the different terms that we use, such as floor, bowl, diaphragm? How do we use these terms?

In dissection, we see that the levator ani and coccygeus group do not form a single structure that can be clearly defined as a floor. However, a pelvic floor or diaphragm can be created depending on which structures are removed with a scalpel, and how. Considering the 'pelvic floor muscles', when looking at the levator ani from below, this muscle group consistently presents as more of a funnel than a floor or bowl. The levator ani is a thin muscular structure and is not separate from the surrounding connective tissues. The pelvic soft tissues include more than just muscles and the soft tissues have important continuities with the rest of the body, internally and externally, above and below.

Here we will also mention the obturator internus, as an arguably important part of the 'pelvic floor', but rarely included in the definition. The levator ani links in with the obturator internus via the arcus tendinous levator ani, and thus we have a direct musculofascial continuity to the lower limb. Not to mention the interconnection through the various connective tissues. Every step we take, how we sit, how we move, how we breathe, is going to have an impact on the levator ani. This is just one example of why knowledge about the pelvis is not just for therapists or health care professionals working with pelvic health. It is relevant for anyone working with the body. Along the same line, the rest of the body is relevant for those working with pelvic health. We believe that connective tissues not traditionally associated with structures of the pelvic 'floor' will have clinically significant impacts on common presentations and should be more widely considered.

With these ideas we acknowledge that even with our dissections, we have removed some structures and let others remain, based on our beliefs and perspectives about anatomy and function. We also acknowledge that tissues in a cadaver are not the same as in a live, weightbearing person, and we must be careful what we extrapolate from what we see in the dissection lab. Human anatomy is hugely complex and can be understood in different ways

depending on how we use the scalpel to define and divide the structures. We welcome critical thinking and debate as to how we view, understand and discuss anatomy and the body, recognizing the need for continuous review as more knowledge comes to light.

References

1. Herschorn S. Female pelvic floor anatomy: the pelvic floor, supporting structures, and pelvic organs. Reviews in urology. 2004;6(Suppl 5): S2-S10.
2. Corton MM. Anatomy of the pelvis: how the pelvis is built for support. Clinical obstetrics and gynecology. 2005;48(3):611-26.
3. Corton MM. (2009). Anatomy of pelvic floor dysfunction. Obstetrics and Gynecology Clinics of North America. 2009;36(3):401-419.
4. Messelink B, Benson T, Berghmans B, Bo K, Corcos J, Fowler C, et al. Standardization of terminology of pelvic floor muscle function and dysfunction: report from the pelvic floor clinical assessment group of the International Continence Society. Neurourology and Urodynamics. 2005;24(4):374-80.
5. Bo K, Frawley HC, Haylen BT, Abramov Y, Almeida FG, Berghmans B, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for the conservative and nonpharmacological management of female pelvic floor dysfunction. International urogynecology journal. 2017;28(2):191-213.
6. Raizada V, Mittal RK. Pelvic floor anatomy and applied physiology. Gastroenterology clinics of North America. 2008;37(3):493-vii.
7. Ashton-Miller JA, editor. On the biomechanics of the female pelvic floor. 7th Interdisciplinary World Congress on Low Back & Pelvic Pain; 2010; Los Angeles.