Pre and Post Partum Pelvic Health: The Role of Pelvic Floor Physiotherapy

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- Support from clinical mentors and colleagues with experience in:
  - Area of issue
  - Producing publishable work
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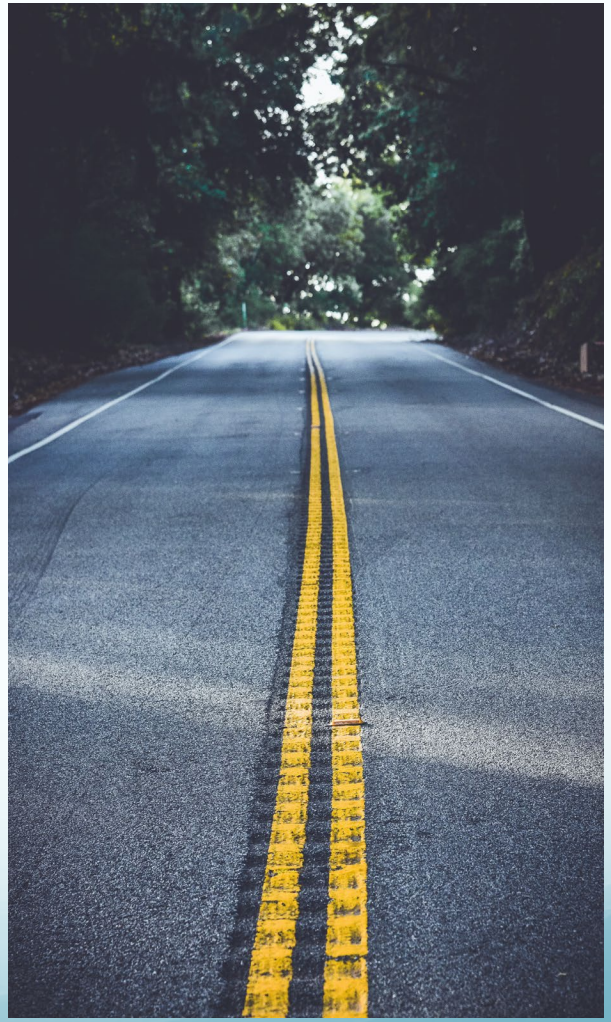

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- Graduated from Curtin University, Australia with a Masters in Physiotherapy (MScPT) 2007
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- UBC Post Graduate GCOMPT Advanced Ortho/Manual Therapy and Manipulation (FCAMPT)
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- Diane Lee and Associates 2012-2019 (Senior Women's Health Physiotherapist) (Teaching assistant)

BODYNAMICS PHYSIOTHERAPY

YOUR GREATEST WEALTH IS YOUR HEALTH

- BEST job is MOM

Disclosure of Conflict of Interest

- Fee for services provided
- Serve to profit should attendees of the lecture choose to refer to individual speakers

Outline

- Context and Background- The Problem!
- Purpose and Research Question
- Resources for Support
- Literature
- Limitations and Future Methods

Women Through the Life Span

- What is women's health to you?
- If we see women, train them, treat them… we need to know the complexity of what we see in front of us physiologically and physically
- The lifespan is inclusive of child, teen, conception, childbearing, perimenopause, menopause, post menopause

But I don’t treat people with pelvic health problems – yes you do!

- Perinatal
- Post menopausal
- Nulliparous women
- Athletes
- Teens
- Children
- Men
- Post prostatectomy

What is Maternal Health?

- As defined by **WHO (World Health Organization**)
  - refers to the woman during pregnancy (perinatal/prenatal), childbirth and the postpartum period
  - The antenatal/prenatal, perinatal and postnatal populations fall under the umbrella of **women's health**
  - Perinatal is defined as the period before and after birth
  - postpartum is defined as beginning immediately after the birth of a child
  - **Once you deliver a child you are 'postpartum' for the rest of your life and recovery is lifelong**

https://www.who.int/maternal-health/en/

What is Pelvic Health

- **Pelvic Health** is best possible functioning and management of the bladder, bowel and reproductive organs.
- It plays an important role in complete physical, mental, social and sexual well-being
- Pelvic health involves the **pelvic floor**- a group of muscles that acts like a sling to support pelvic organs, continence, sexual function and lumbopelvic hip stability

Functions of the pelvic floor

1. MSK support
2. Organ support
3. Continence
4. Sexual function
5. Circulation

- To perform these functions the muscles need to be able to:

1. Contract concentrically
2. Relax
3. Lengthen while holding tension (eccentrically contract)

Pelvic Floor Dysfunction

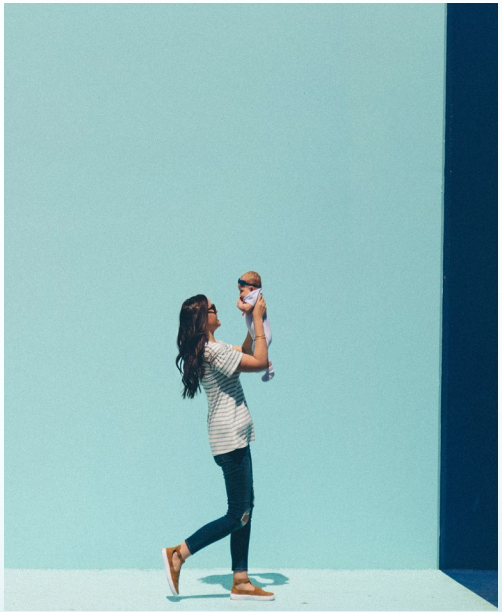
- Present in wide range of clinical conditions: urinary incontinece (UI), anal and fecal incontienence (FI), pelvic organ prolapse (POP), sexual dysfunction, genitopelvic pain and defecations problems (constipation)
- Occurrence when pelvic floor muscles (PFMs) are too weak or too tight, incorrectly used or traumatized, torn or inhibited

Pre and Post Partum Conditions

- **Incontinence – Bladder and/or Bowel**
- **Pelvic Organ Prolapse**
- Genitopelvic pain – dyspareunia, vulvar pain, scar sensitivity
- Lumbopelvic Pain and Pelvic Girdle Pain
- Diastasis Rectus Abdominus (DRA)

Perinatal

- 33% of women experience UI in the first 3 months post partum (Thom and Rortveit 2010)
- 3-6 months post partum, 29% of women reported incontinence of stool and/or gas (Guise et al 2007)
- 85.7% experience pain with penetrative intercourse at first attempt after vaginal or caesarian birth
  - 22% of women continue to have painful intercourse beyond 18mo post-partum (McDonald et al, 2016)



Prevalence of Urinary Incontinence Pre and Postpartum

Pregnancy Related

- Last Trimester: 48% primiparous, 85% multiparous (Morkved & Bo 2003)
- Postpartum:

- 33% experience UI in the first 3 months post partum (Thom et al 2010)
  - Instrumental vaginal delivery>spontaneous vaginal delivery>C-section

- Onset of SUI during pregnancy or 1st 6 weeks pp
  - + Continued UI at 12 weeks post-partum
    - 88-100% will continue to be incontinent without intervention 5 years later (Viktrup et
    - al 2000)
  - + Complete remission of UI at 12 weeks post-partum
    - 5-7 years after delivery 44.6% of women have some degree of incontinence (Wilson
    - et al 2002)

Nulliparous elite athletes: 28% (Nygaard et al 1994)

- Gymnasts 67%, Tennis 50%, Trampolinists 85%

Prevalence & Risk Factors of Pelvic Organ Prolapse

50% of parous women have some degree of symptomatic or

asymptomatic POP (Hagen & Stark 2011)

Age Related

- Degree of prolapse progresses over time

- Prevalence of *symptomatic* POP 20 yrs post partum
  - 14.6% vaginal
  - 6.3% c-section

Risk factors

1 vaginal delivery increases risk X4 (?normal or intervened delivery?)

2 or more vaginal deliveries increases risk X 8.4 (Mant et al

1997)

Forceps delivery → 53% have major defects in PFM (Ashton-Miller &

Delancey 2009)

Post Partum Conditions: Obstetric Risk Factors (7)

- Onset of incontinence during pregnancy – UI
- Parity
  - increased parity = increased risk for UI
  - P1 vs P0 = 2 fold risk increase for POP
    - each additional childbirth added a 10-20% increase in risk
- Older Age at first delivery (UI)
- Forceps > Vacuum (POP)
- 3rd, 4th degree tear (POP, AI)
- 2nd Stage >110mins (POP)
- Fetal Head Circumference >35.5cms (POP)
- Episiotomy (UI)
- Induction, Augmentation of labour, Epidural (UI)
  - Increased likelihood of operative birth

Post Partum Conditions: Non Obstetric Risk Factors (7)

- Connective tissue disorders
  - eg Ehlers-Danlos, Marfans, hypermobility syndrome
- Occupation involving heavy lifting
- History of constipation
- COPD
- Obesity
- Increased thoracic kyphosis

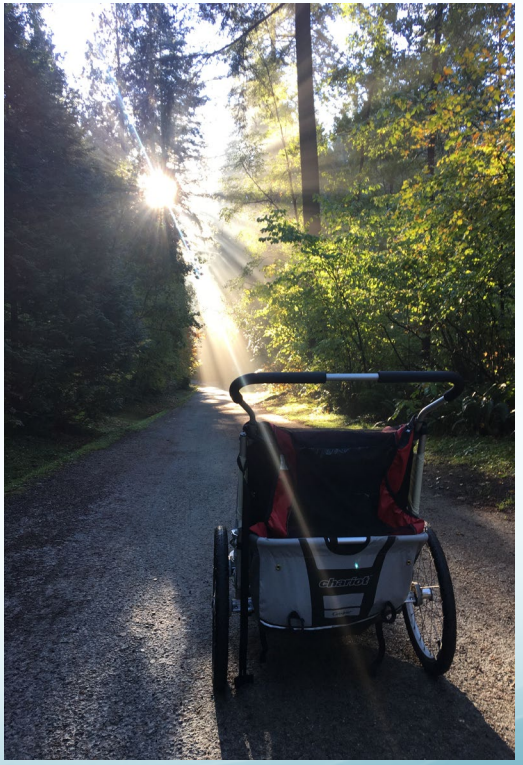
A Need For Awareness
Current Observations in Practice

- Majority of clients are self-referred
- Assumption that symptoms are normal
  - don't disclose to care provider
- Early overwhelm →decreased self care
  - Not seeking appointments for themselves unless it is REALLY BAD

Some women are asymptomatic at this point! But what are these implications for return to activity and/or peri/menopause!

A Need for Awareness
Current Observations in Practice: Activity Level

- May not have symptoms until they return to higher level of physical activity
  - Months to years
- Pregnancy/parenthood physical activity changes
  - Less sedentary BUT decrease in moderate to vigorous physical activity (14)
  - Many barriers to attaining recommended levels of physical activity for health benefits
- Daily recommended physical activity requirements for health not met
- Great opportunity to improve for physical and mental health benefits



A Need For Awareness
Current Observations in Practice: Confusion

- "Why didn't anybody ever tell me?"
- "Why didn't anybody ever ask?"
- Words we hear:
  - Fear
  - Shame
  - Alone
  - Vulnerable
  - Confused
  - Failure
  - Broken
  - Poor quality of life outcome
  - Powelessness
  - Loss of control of their body

Lets face it…

- High prevalence of pelvic floor dysfunction = poor quality of life = impact on health-related economics

"Trauma is in the eye of the beholder, and health care providers should be aware that a woman may experience a birth as traumatic even if she and her infant are healthy."

ACOG Committee Opinion Number 736 on Optimizing Postpartum Care (May 2018)

Does Health Care Meet the Needs of these Women?

- The belief that symptoms of these conditions ie leakage, are ‘normal’ after pregnancy is firmly embedded in the cultural experience of childbirth across all demographics
  - SUI, UI, POP often kept as ‘a secret’ and not addressed
- This can result in long term physical, emotional and mental health issues, as Haaglund (2007) reports, that women with UI feel they are living with a ‘taboo’ and an uncontrolled body, reporting the experience of powerlessness due to the inability to control their UI.
- **Consequences :** fear, frustration, anxiety, reduced social activity and discontinued physical exercise
- high prevalence of pelvic floor dysfunction = invalidating effects on quality of life = impact on health-related economics

Current Knowledge of Pelvic Floor Dysfunction is INSUFFICIENT

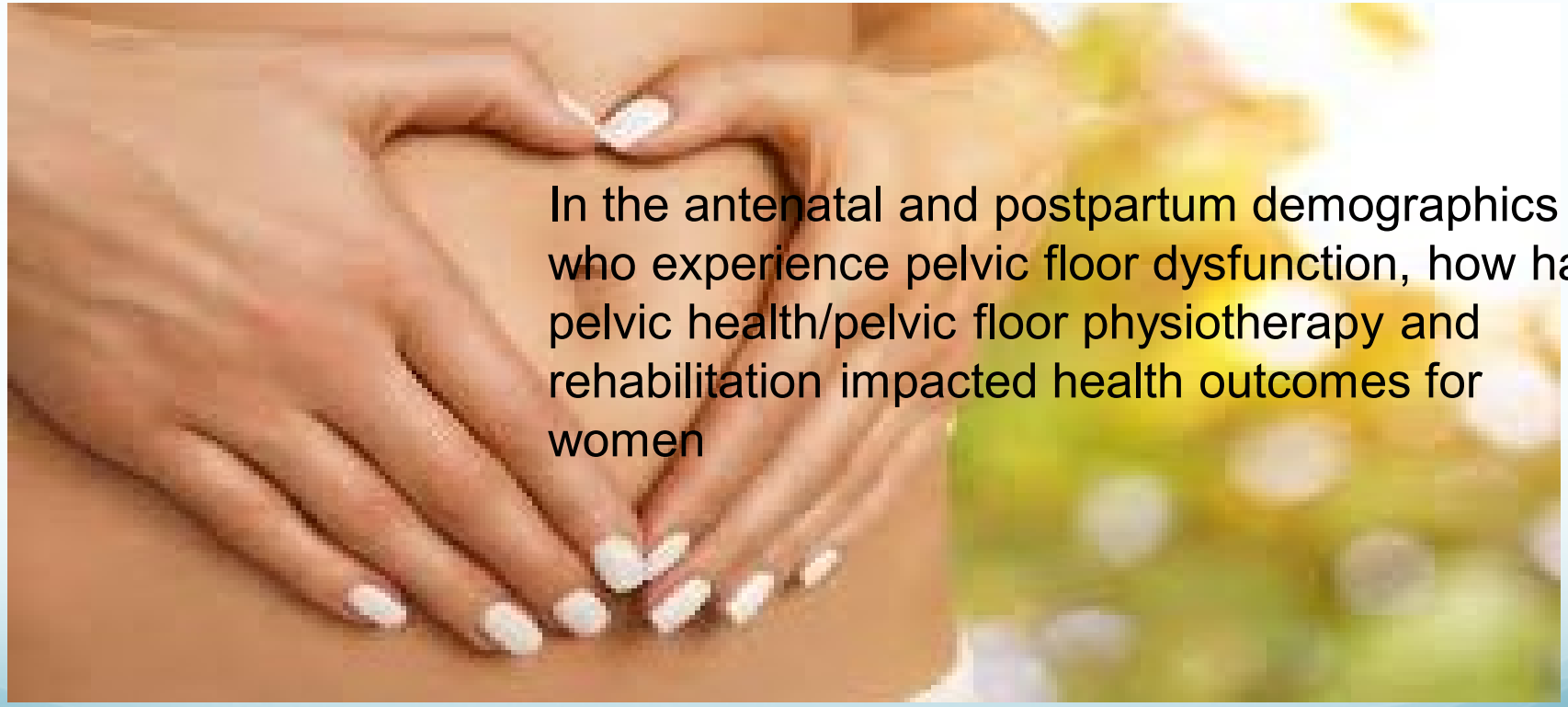
- **Insufficient knowledge is a primary barrier for seeking care and instigator of fear**
- **Information/Education received later in life, so timely prevention was not possible (Neels et al 2016)**
- Peripartum women held more pessimistic perception of PP PFD- 75% peripartum women and 68% postmenopausal women felt insufficiently informed or wanted more info (Neels et al 2016)
- **PFD after child birth: problems are worse than they anticipated, especially PF pain,UI and POP with minimal to no information presented in the antenatal period- some didn't know what the pelvic floor was and did! (Buurman et al, 2013)**
- Poor communication, lack of clear education and power of relatives stories of past were barriers to seeking help, disempowering women and causing a climate for normalisation (Wagg et al, 2017)
  - Limited knowledge despite being at increased risk for these conditions during and after pregnancy

Degree of Bother?

- Lipschuetz et al 2015 investigated rates and range of PFD complaints women one year PP
  - 198 women completed the questionnaire
  - Response rate 94%
  - Severe degree of bother from one or more PFD reported by 40-90%
  - Some level of dyspareunia was reported 37%

More studies need to be done! If you ask women they will tell and are more than willing to listen.

Purpose and Advocacy



In the antenatal and postpartum demographics who experience pelvic floor dysfunction, how has pelvic health/pelvic floor physiotherapy and rehabilitation impacted health outcomes for women

Search Strategy

- Ovid Medline , PubMed and CINAHL was used for my search strategy
- No restriction on timeline/date was used due to the population and intervention being quite recent in the literature
- Population search terms were inclusive of the following: “pelvic floor”, pelvic floor, pelvic floor disorders, maternal health services, perinatal care, postnatal care, prenatal care, antenatal care
- . With respect to intervention the following search terms were used: physical therap*, rehabil*, physical therapy modalities and exercise therapy

Example of Search Strategy

Database	Search Term
Ovid MEDLINE All dates to 2019	1.“pelvic floor” 2.pelvic floor 3.pelvic floor disorder 4. 1or 2or 3 5.maternal health services/or perinatal care/ or postnatal care/or prenatal care 6.(antenatal or “maternal health services” or perinatal or postnatal or prenatal).ti,ab 7. 5 or 6 8.(physical therap* or physiotherapy* or rehabil*).mp 9. physical therapy modalities/ or exp exercise therapy 10. 8 or 9 11. 4 and 7 and 10

Inclusion/Exclusion

- Limits set to include articles written or translated into English
- Selection of appropriate studies that fulfill inclusion criteria:
  - (a) systematic reviews (b) RCTs published in peer reviewed journals (c) maternal health with respect to the childbearing years (antenatal, prenatal, perinatal, postpartum) (d) pelvic floor dysfunctions inclusive of incontinence (stress urinary incontinence, urge incontinence) (e) pelvic floor physiotherapy

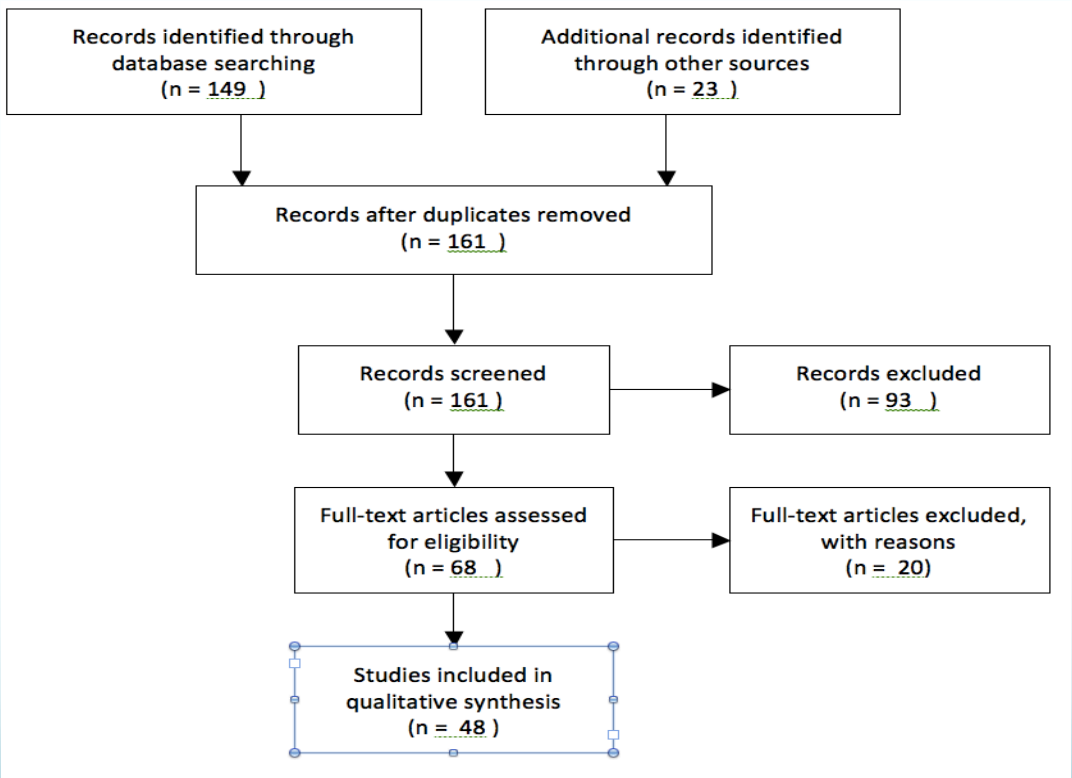
Quality Appraisal Tool

- ROBINS 1 – for non RCTs
- Cochrane Risk of Bias Tool – for RCTs – assess study quality- evidence for its reliability and validity has been reported (Hartling et al., 2009)
  - Hartling, L., Ospina, M., Liang, Y., Dryden, D., Hooton, N., Krebs Seida, J., et al. (2009). Risk of bias versus quality assessment of randomised controlled trials: Cross sectional study. British Medical Journal, 339, 1–6

Data Extraction Plan

- Removal of duplicate abstracts
- Relevant titles screened for inclusion/exclusion
- Study details: author, year, study design (RCT, non randomised, case study etc), intervention group, control group
- Population: age, gender (female), pre/postpartum, North America, Europe, Australia , incontinence, prolpase
- Intervention: pelvic floor physiotherapy, pelvic floor exercise, duration, setting, format, delivery method
- Outcome: effect on pelvic floor dysfunction, improved quality of life

PRISMA Flow


Records identified through database searching (n = 149)
Additional records identified through other sources (n = 23)
Records after duplicates removed (n = 161)
Records screened (n = 161)
Records excluded (n = 93)
Full-text articles assessed for eligibility (n = 68)
Full-text articles excluded, with reasons (n = 20)
Studies included in qualitative synthesis (n = 48)

Limitations

- Studies in English
- Pelvic floor muscle training protocols can vary, shouldn’t we be treating the ‘whole person’!!??
- Limited research, limited RCTs
- Small group numbers
- No vast studies internationally- specific to Europe, North America, Australia, New Zealand
- No vast studies specific to Canada and its lack of programing

Review of Supporting Literature

- Pelvic Floor PT and WH promotion
  - **PFPT evidence based, low risk, low cost and minimally invasive (Lawson et al, 2018)**)
  - Pregnant women require MORE health education re PFM- diverse modes of education are beneficial to ensure all demographics are targeted (Hill et al, 2017)
  - Nulliparous women- although 89% had heard of PFMT at mid pregnancy, only 35% performed PFMT once or more a week (Hilde et al, 2012)

- Prenatal Support
  - **Antenatal UI/SUI is a risk factor for PP UI/SUI (Joanna Briggs Institute, 2011)**
  - Definitive gap in knowledge and education offered – women responded well to advice given on benefits of PFM exercises in prevention of UI/SUI; these gaps in most settings need to be addressed (Daly et al, 2019)
  - Birth prep program – (started 18-24 weeks) primary objectives to enhance physical activity, birth prep education, prevent UI, LBP, anxiety and promote autonomy (Miquelutti et al,)
  - **Majority of studies indicate prenatal physiotherapy plays preventative role LBP/PGP, incontinence, pelvic pain and reduction in symptoms (Van Kampen et al, 2015)**

- Delivery Mode and PFD
  - **Obstetrical characteristics DO dictate PFD post partum**- operative delivery high association with PO, UI and AI (Blomquist et al)
  - **UI/SUI is health problem affecting QOL**- caused by previous vaginal deliveries/pregnancies- vaginal increases risk as does trauma in second and third stage labor

- Pelvic Floor Muscle Training – ICS (2011)
  - PFMT muscle training in general fitness classes (pregnancy) – individual assessment and correct instruction of PFM contraction is optimal for integration of effective PFMT (Bo and Hackstad, 2011)
  - **PFMT program following general strength training principles can be recommended both DURING pregnancy and POSTNATAL (Soave etc al, 2019)**

  - Combined training PFM and synergistic muscles (TA (transverse abdominals) and isolated PFMT improved QOL (Ptak et al, 2019)
  - 7 years post- 6 week PFMT program – benefits of physiotherapy for SUI PP still present (Dumoulin et al, 2013)

What about risk assessment/screening?

- Pre- Natal Screen and Wellness Exams to identify risks?
  - Preventative Pelvic Health Appointments/Wellness Support- evidence suggests long term impact (UI, POP)
  - Post Partum success starts with antenatal care
- UR- CHOICE

(Wilson et al, 2014)

UR-CHOICE (16)

- U: UI before pregnancy
- R: Race/ethnicity
- C: Child bearing started at what age?
- H: Height (mother's height)
- O: Overweight (weight of mother, BMI)
- I: Inheritance (family history)
- C: Children (number of children desired)
- E: Estimated fetal weight

Screening for UI and POP

There is a lack of effectiveness trials of screening for UI and POP- important deficiency in women's health research considering its high prevalence, health burden and stigma (Nelson et al, 2018)

- Most clinicians do not routinely inquire about incontinence or POP, only reaching their attention if the woman seeks help
- Of women who seek medical attention 30% not evaluated for symptoms and 80% not treated!

How Can Pelvic Health Physiotherapy Help?

Level 1/Grade A evidence for Pelvic Health Physiotherapy as a first line treatment for stress, urge, mixed incontinence and prolapse.

Summary from the International Consultation on Incontinence 2013

- Research for anal incontinence is lacking, but clinical experience and low grade evidence suggests it is beneficial.

Optimal Response& Future Implications

- **It is not just about 'pelvic floor physio'; the need for education, support, empowerment and treatment is essential for mental, emotional and physical recovery of the mother**
  - Biopsychosocial approach, head to toe (including internal exam), detailed assessment
- **Long term benefits of rehabilitation and pelvic health treatment**
  - Identify risks, prenatal screen, postpartum screen improves return to activity, life and reduces stress and fear (leakage and POP)
  - Better body undersanding
    - Knows how to manage/modify/self care for symptoms
    - Not afraid of symptoms
    - Understands risk future family planning
    - Knows when to come in
- **At all levels (guidelines, patient/clinician), adopt an approach to the design and implementation of PFMT interventions (prevention and treatment) that incorporates appropriate behavior change techniques to promote exercise adherence. Specifically**:
  - Develop accurate and sufficient patient "knowledge"
  - Teach skills, then enhance performance in the correct "physical skill" of a PFM contraction and develop patient confidence – EMPOWER !
  - Promote positive and decrease negative "feelings about PFMT" and counter negative with positive role models for PFMT.
  - Boost the "prioritization" of PFMT in patients' lives.

We Are Behind…Why French Women Don't Pee Their Pants

- France
  - Any woman who has delivered a baby gets a prescription for 10 pelvic floor physiotherapy sessions to 're educate' her pelvic floor
  - 4-6 weeks, assessment with midwife and pelvic floor physiotherapist
  - Follow ups twice a week for 1-2 months
  - If more sessions are needed a gynecologist will write a script for further follow up
  - 10 sessions are also allocated for DRA (abdominal muscle rehabilitation)
  - NOTE: now France gives visits to women who are 'symptomatic' – this seems backwards targeting symptomatic women- this may be in the short term but we do not have 30 yr longitudinal study to support long term outcomes!

Options Available to Address this Issue

- What we have in Canada now…
- Saskatchewan (Regina and Saskatoon): “PELVIC FLOOR PATHWAY”
  - ‘responds to patient & provider demand for faster access to effective treatment for UI and POP’
  - Developed by urologists, gyn, primary care physicians, pelvic floor PTs, nurses, patients
  - Support consists of: education, assessment, decision support and conservative management
  - Referals accepted by physicians, NPs, midwives
  - Multidisciplinary clinic approach

http://www.sasksurgery.ca/patient/pelvicfloor.html

Working Together – Our Role

- ACOG Committee Opinion May 2018 – Optimizing Post-Partum Care
  - "Assess for presence of urinary and fecal continence, with **referral to physical therapy** or urogynecology as indicated."
- Joint SOGC/CSEP clinical practice guideline – 2019 Guideline for Physical Activity throughout Pregnancy (Matolla et al, 2019)
  - "Pelvic floor muscle training may be performed on a daily basis to reduce the risk of urinary incontinence. **Instruction in proper technique is recommended to obtain optimal benefits.**"
- Screen pelvic health function
  - Ask specific questions about symptoms
  - Test specific function
    - "proper performance of Kegel exercises should be confirmed by digital vaginal exam or biofeedback" - Society of Obstetricians and Gynecologists of Canada 2006 guidelines (18)
  - **Preventative Care!**

A little clinical secret….

- Contrary to most people's beliefs…PF strengthening exercises are NOT THE ONLY WAY to address the pelvic floor

Why not? – because a lot of people do it incorrectly

- 25%-40% of women have decreased cortical awareness of PFM and will Valsalva when attempting to do a PFM contraction (Bump et al 1991)
- Alternately, they may contract but not lift the levator plate
- When PFM are over-active lift may be restricted (depends on PFM starting position) (Whittaker 2007)
- PFM able to contract but no fascial tension is generated
- Many present with asymmetry of resting activation, ability to contract/relax – left/right, front back

****MUCH MORE INVOLVED THAN JUST CONTRACTING THE PELVIC FLOOR!**

Why not?

- If the problem is caused by an overactive PF or asymmetrical PF activation, strengthening exercises may make it worse!
- Can contribute to:
  - Improper bracing strategies
  - Pelvic pain syndromes
  - Vulvar pain syndromes
  - Pudendal neuralgia
  - Coccyx pain
  - Hip/SI/LB pain
  - Worsening symptoms of prolapse and incontinence
  - Sexual dysfunction
  - And more!

BEFORE PRESCRIBING ANY TREATMENT REGIME FOR THE PELVIC YOU MUST IDENTIFY IF THE PELVIC FLOOR IS OVERACTIVE OR UNDERACTIVE and WHY

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The pelvic floor is not a light switch

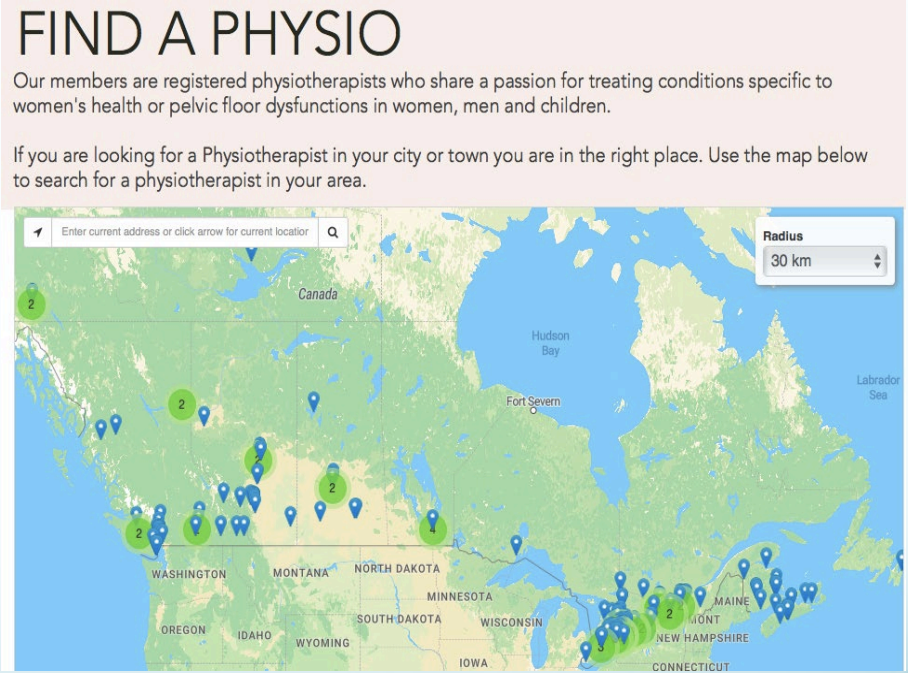
- Postural and respiratory functions of the pelvic floor muscles (Hodges et al 2007)
  - Preparatory increase in PFM activity with arm movements
  - Tonic activation of the PFM with a sustained task with **modulation in response to perturbations**
  - Modulation of the PFM activation with breath
- Note that the pelvic floor activation varies according to the task
  - Volume dial vs light switch

Conclusion and Recommendations

- What we know:
  - Pre and postpartum women suffer from pelvic floor dysfunction, and it is all too common, and dismissed as normal
  - Pelvic floor physiotherapy and rehabilitation plays a role in improving pelvic floor dysfunction
  - Clearly language (around birthing) needs to change along with education, knowledge transfer and empowerment
- **FUTURE DIRECTION:**
  - **MORE RESEARCH IN WOMENS HEALTH**
  - When do we start education? If young teens knew about this (school sex education) would this transfer to knowledge in childbearing years?
  - Web Based?
    - Noted reduced stay of PP impacts ability for PT to provide education, support and intervention- digital health resources does provide useful information (Goode, K, 2018)
    - Noted preconditions for women to participate were program costs and travel time (<15 min)- 15% ONLY were not interested at all, therefore most PP women noted need for improved preventative pelvic floor management (Moossdorff-Steinhauser et al, 2015)
  - Home Based?
    - 3-9 mos PP home based program- PF muscle strength improved significantly (Ahlund et al, 2013)

Find a Physio on the Web – Chat with us!

- Canadian Physiotherapy Association – Women's Health Division
  - https://www.womenshealthcpa.com/
- Physiotherapy Association of British Columbia
  - https://bcphysio.org/find-a-physio



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