

Ankylosing Spondylitis: A Focus on Wellness



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RAPP – Winter 2020

Experience
Georgian

Canadian
Spondylitis
Association



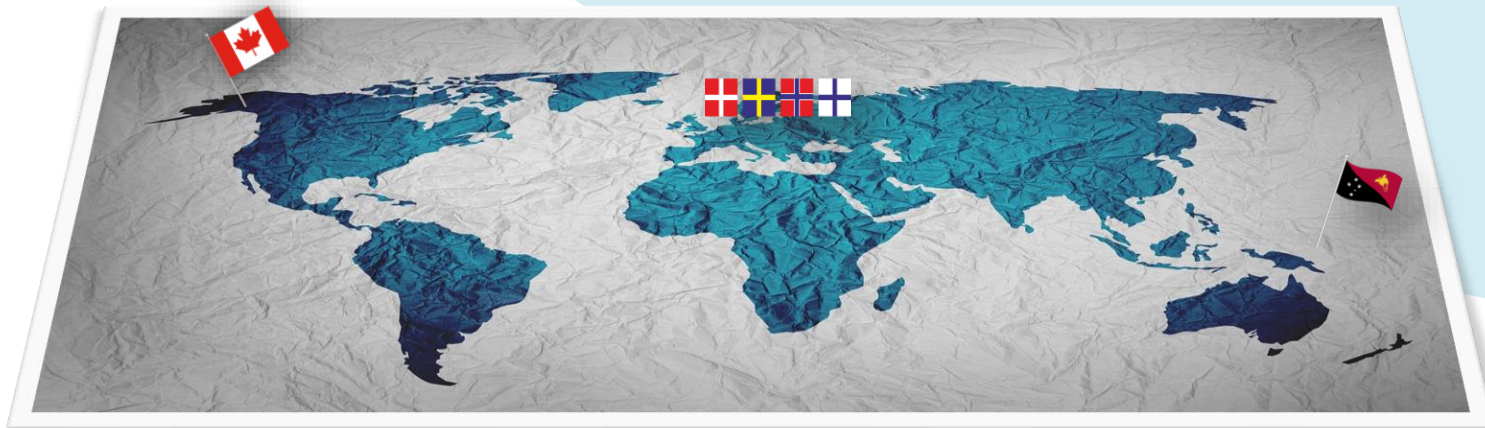


OBJECTIVES

- ① Epidemiology
- ② Pathogenesis and Associated Risk Factors of **A**nkylosing
Spondylitis (**AS**)
- ③ Diagnosis and Management
- ④ The approach used to analyse the data obtained from a **CASE**
STUDY conducted by **The Canadian Spondylitis Association**
- ⑤ Discussion & Summary
- ⑥ References

Epidemiology

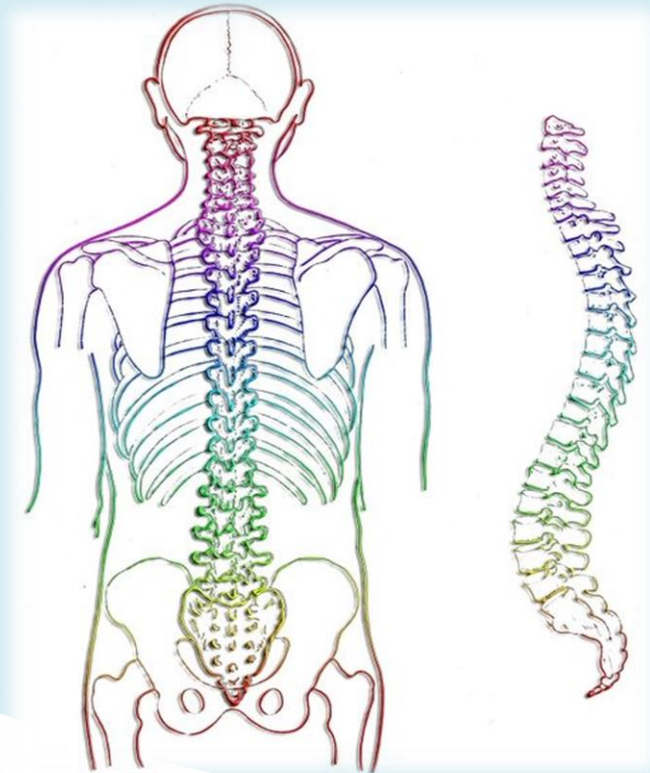
- ❖ Between **0.09% - 0.3%** of the global population suffer from AS (*Hopkinsarthritis.org, 2020*)
- ❖ Prevalence in **Canada** was **more than double in 2016** (**0.09%** of the population) **compared to 2006 (0.04%)**
- ❖ Prevalence of the disease was **highest** (*Carmen Stolwijk et al., 2012*):
 - i. **Papua New Guinea (53%)**
 - ii. **Western Canada (50%)**
 - iii. **Nordic countries (15%-25%)** and **Western Europe (13% - 14%)**
- ❖ More prevalent among **Men** than **Women (2:1)**
- ❖ About **80%** were **aged ≤ 30**





Pathogenesis - Associated Risk Factors

- ❖ **Unknown** exact **Pathophysiology**
- ❖ **Histological Analysis** of the microscopic lesions in the ligaments and the attachment sites to the bone(s) have illustrated **Prominent Inflammatory Reactions** followed by the erosion of the affected bone(s) (*Ranatunga & Miller, 2014*)
- ❖ **Biochemistry Findings** tend to be ***HLA-B27 Positive Among the Majority** of AS patients (*Carmen Stolwijk et al., 2012; Edward F. Goljan, MD, 2019; Hopkinsarthritis.org, 2020*)



AS - Diagnosis

- ❖ Chief Complaints: Morning Stiffness, Lower Back Pain over than three months which Improves with Exercise)
- ❖ Diagnosis based on *The New York Diagnostic Criteria*:
 - ✓ At least ONE Radiological Finding (e.g. 'bilateral sacroiliitis grade ≥ 2 , or unilateral sacroiliitis grade 3 to 4')
 - ✓ One Clinical Criterion (i.e. 'Lower Back Pain and Morning stiffness over than three months which improves by Physical Activity, limited forward and lateral motion of the spine') (*Spondylitis Association of America, 2020; Ranatunga & Miller, 2014*)
- ❖ Can be associated with Extra-Articular, Multi-Systemic manifestations (i.e. involvement of the liver)



Ankylosing Spondylitis (AS) - Management

❖ Therapeutic Agents:

- Analgesics (i.e. ‘NonSteroidal Anti-Inflammatory Drugs – *NSAIDs*’)
- “ Disease Modifying Anti-Rheumatic Drugs” (“*DMARDs*”) - adjunctive administration of certain analgesics/anti-inflammatory drugs with some other drugs (e.g. Methotrexate, Steroids) (*Edward F. Goljan, MD, 2019*)

❖ Surgery (e.g. Hip Surgery) is considered as the beneficial treatment option for some patients

❖ Physical Activity - Implementing certain Physical Activities (e.g. *Stretching Exercise*)



The Canadian Spondylitis Association – Spondylitis Study

- ❁ The **CSA** Study – **Wellness**
- ❁ Initially **840 Patients**
- ❁ In **Total 535 Responses**
- ❁ Both **Men** and **Women**
- ❁ **Aged 18 – Over 65 (3 under age 18)**
- ❁ Different Geographic –
Mainly from **Canada**



Data Analysis Approach – Wellness

❖ Analyzing **Patients' Wellness** (the **Physical** and **Psychological** impacts of the disease), based on:

- ✓ * **BASFI**: Patients mobility level by using 10 standard questions - *Functional Anatomy* (putting socks, bending, reaching, changing position, standing, turning, climbing steps, looking over the shoulder, and **TWO items** assessing the *patients' ability to cope with everyday life*)
- ✓ The "**D**iagnostic and **S**tatistical **M**anual of Mental Disorders – 5" (**DSM5**):
 - *Depressive Disorder, Anxiety, Sleep Disorder, Somatic Symptoms (e.g. Fatigue), and so forth*





Data Analysis Approach – Physical Wellness

- ❑ Mobility and “Bath Ankylosing Spondylitis Functional Index”(BASFI)
- ❑ Meta-Analysis studies - average Score of the overlapped questions/Answers (e.g. “having restriction to put shoes on” (Q98) versus “to try shoes”(Q97)

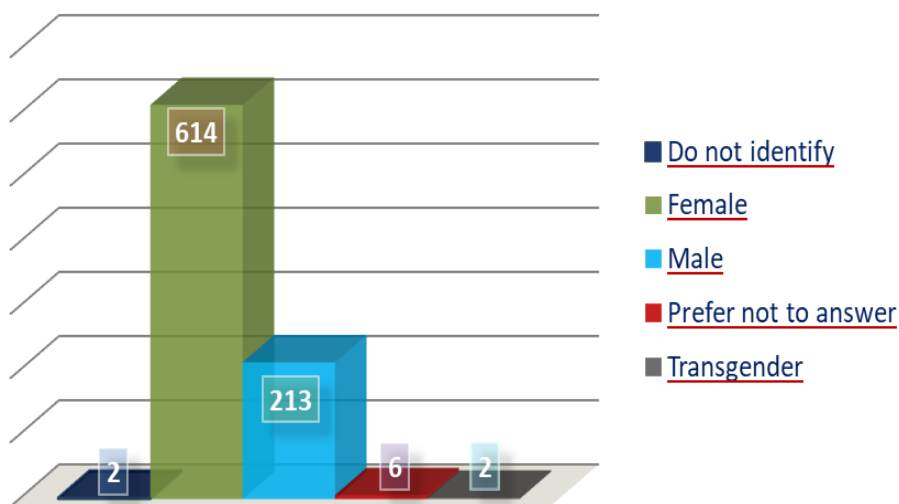
- 1 Putting on your socks or tights without help or aids (e.g. sock aids)?
- 2 Bending forward from the waist to pick up a pen from the floor without an aid?
- 3 Reaching up to a high shelf without help or aids (e.g. helping hand)?
- 4 Getting up out of an armless dining room chair without using your hands or any other help?
- 5 Getting up off the floor without any help from lying on your back?
- 6 Standing unsupported for 10 minutes without discomfort?
- 7 Climbing 12-15 steps without using a handrail or walking aid (one foot on each step)?
- 8 Looking over your shoulder without turning your body?
- 9 Doing physically demanding activities (e.g. physiotherapy exercises, gardening or sports)?
- 10 Doing a full day activities whether it be at home or work?



Table 1. Table illustrating BASFI questions, MDAPP (2020)

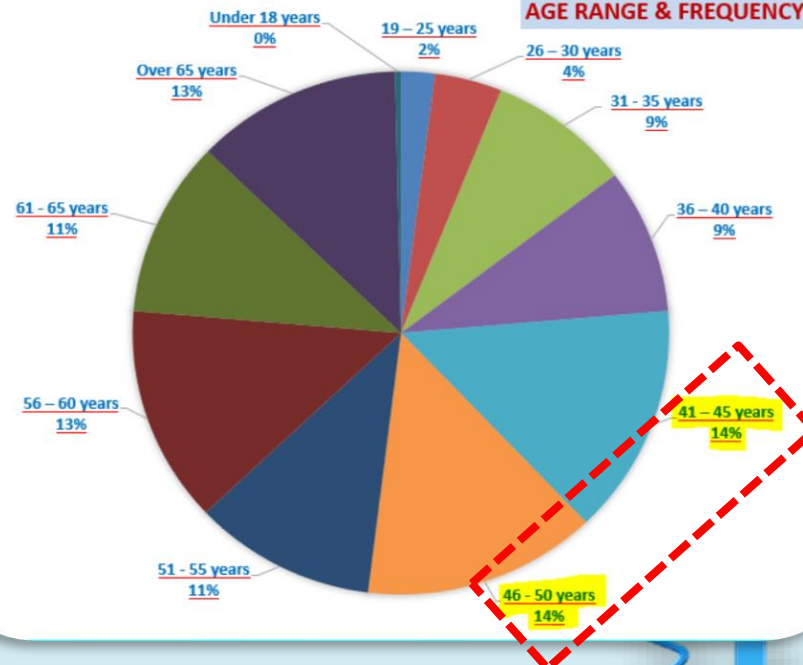
Demographics

Gender Frequency



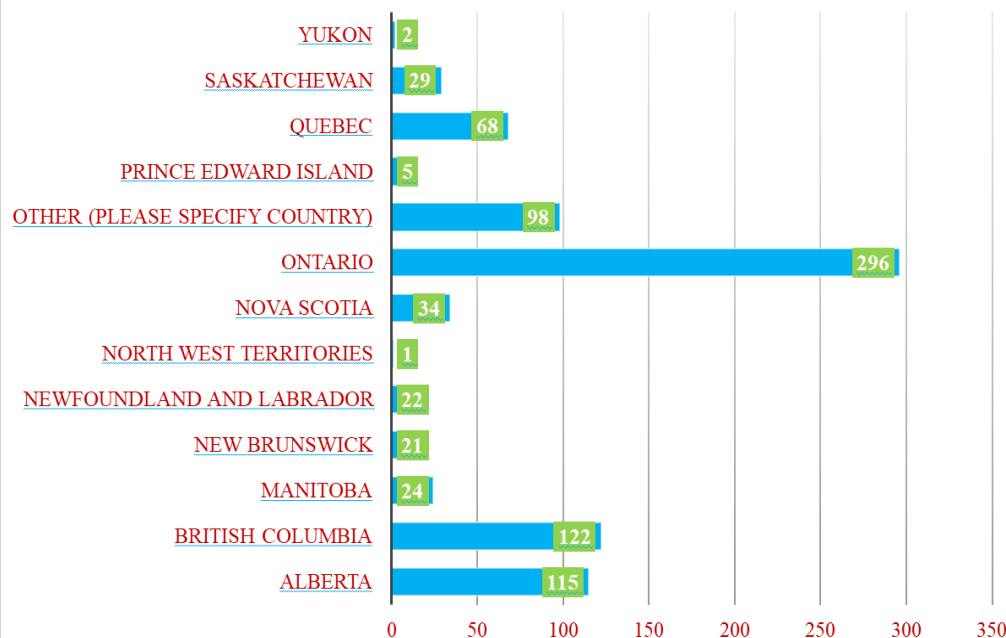
- **614** Female (73.2%)
- **213** Male (25.4%)
- 6 Preferred not to say
- 2 Transgender
- The majority **aged between 41 - 50**

AGE RANGE & FREQUENCY

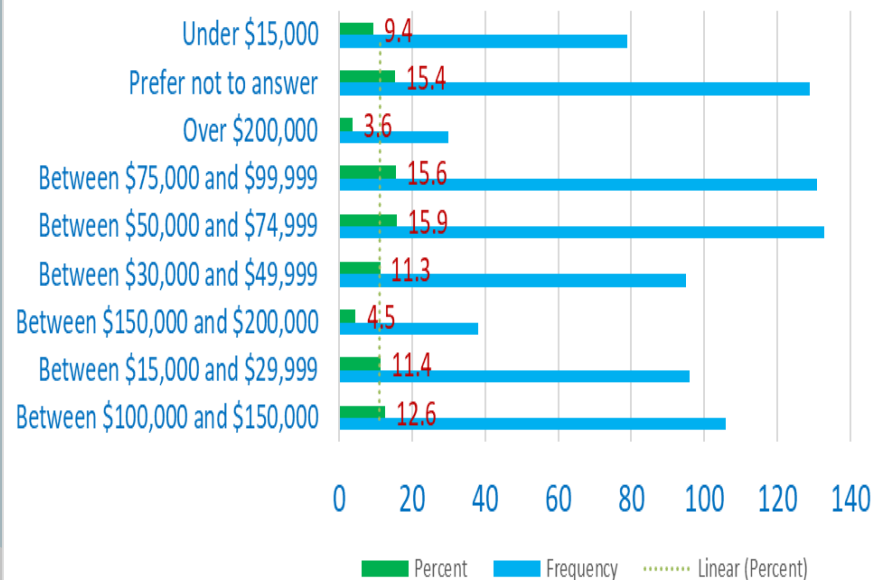


Demographics

Demographic - Location



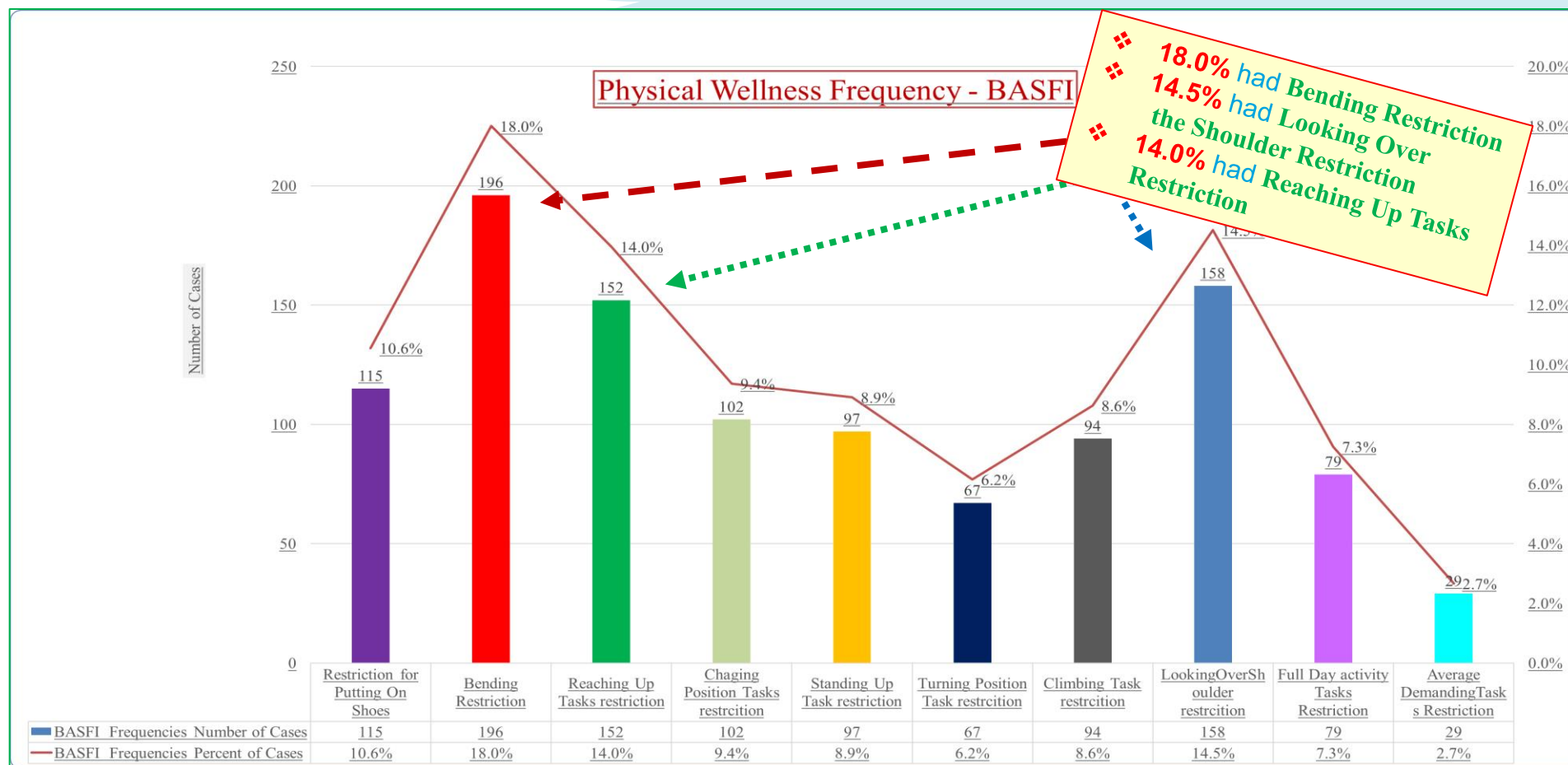
Annual Income Frequency



- ❖ **296** – From **Ontario**
- ❖ **122** - From **BC**
- ❖ **115** - From **Alberta**
- ❖ The majority had **Annual Household Income** between **\$50,000 - \$74,999**



Physical Wellness – BASFI Frequencies



Correlation Analysis – BASFI & Tasks' Restriction

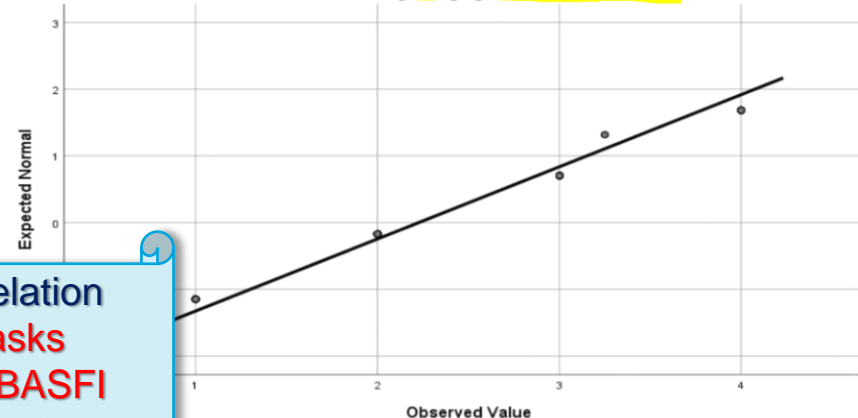
Average Score for Putting On Shoes restriction

Normal Q-Q Plot of Average Score for Putting On Shoes restriction



AverageChagingPositionTasks restriction

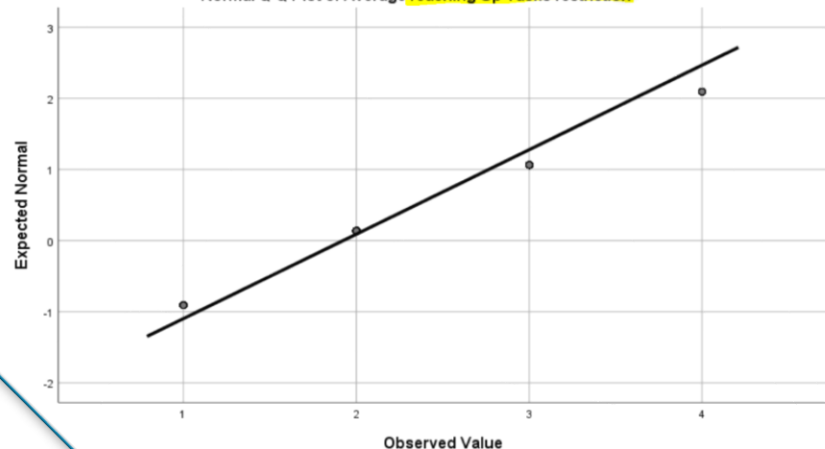
Normal Q-Q Plot of AverageChagingPositionTasks restriction



**Positive Correlation
Between Tasks
Restriction & BASFI
Measurements**

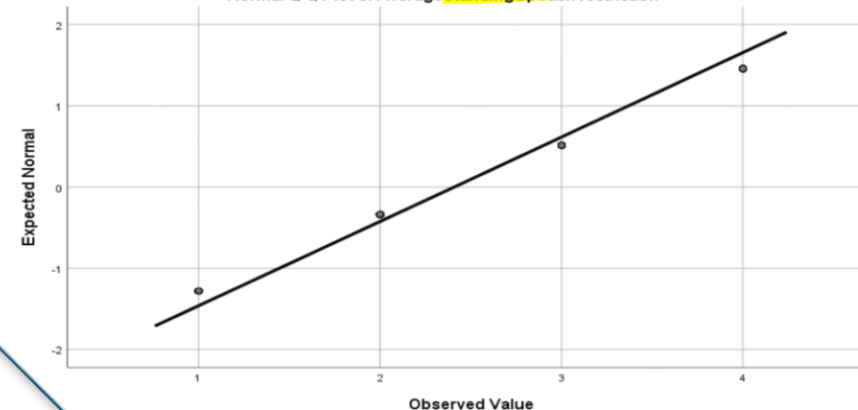
Average reaching Up Tasks restriction

Normal Q-Q Plot of Average reaching Up Tasks restriction



AverageStandingUpTask restriction

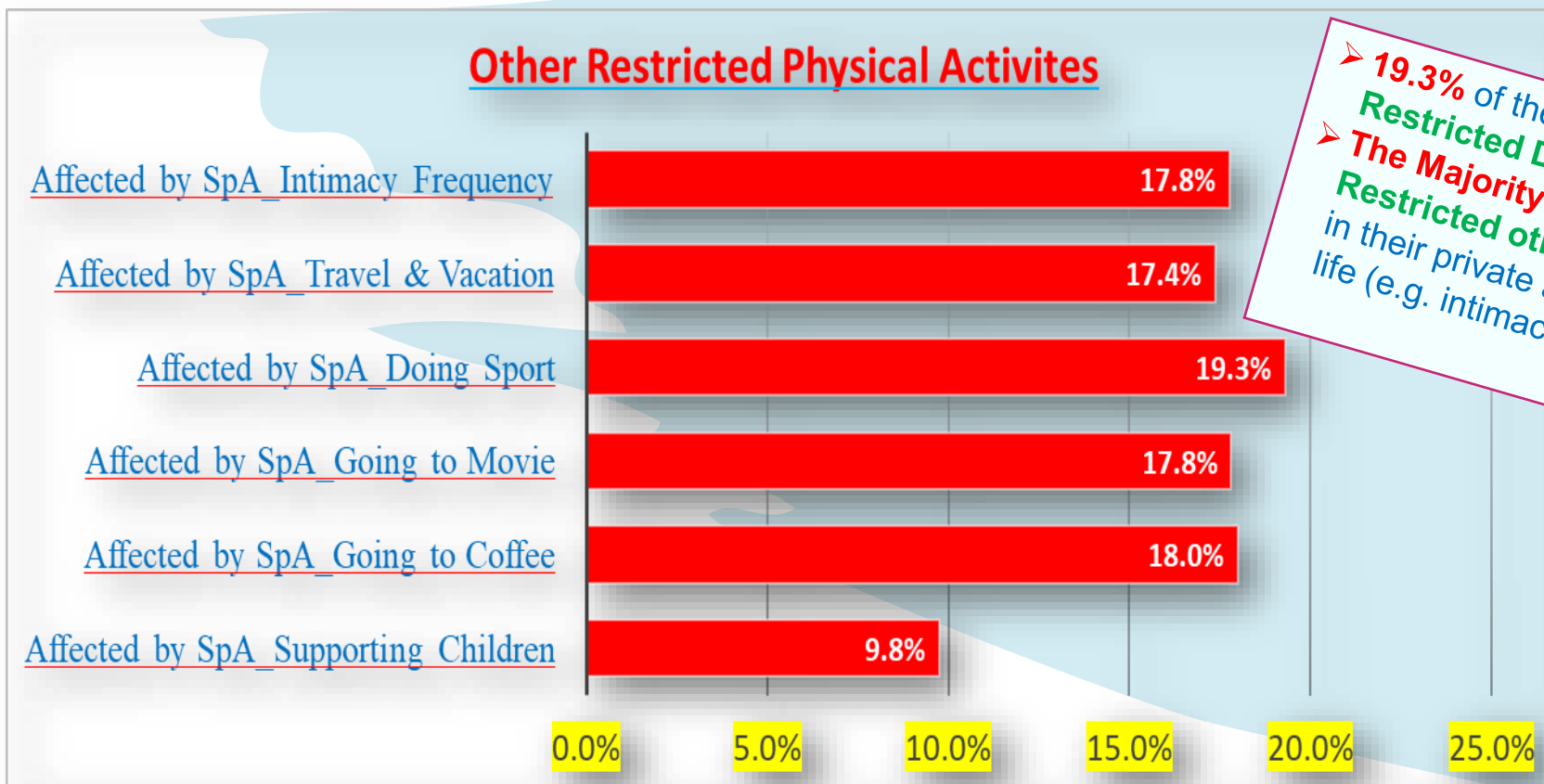
Normal Q-Q Plot of AverageStandingUpTask restriction





Physical Wellness – Other Restricted Activities

Other Restricted Physical Activities

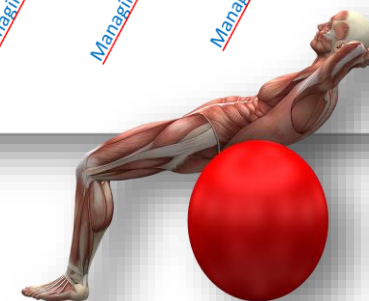
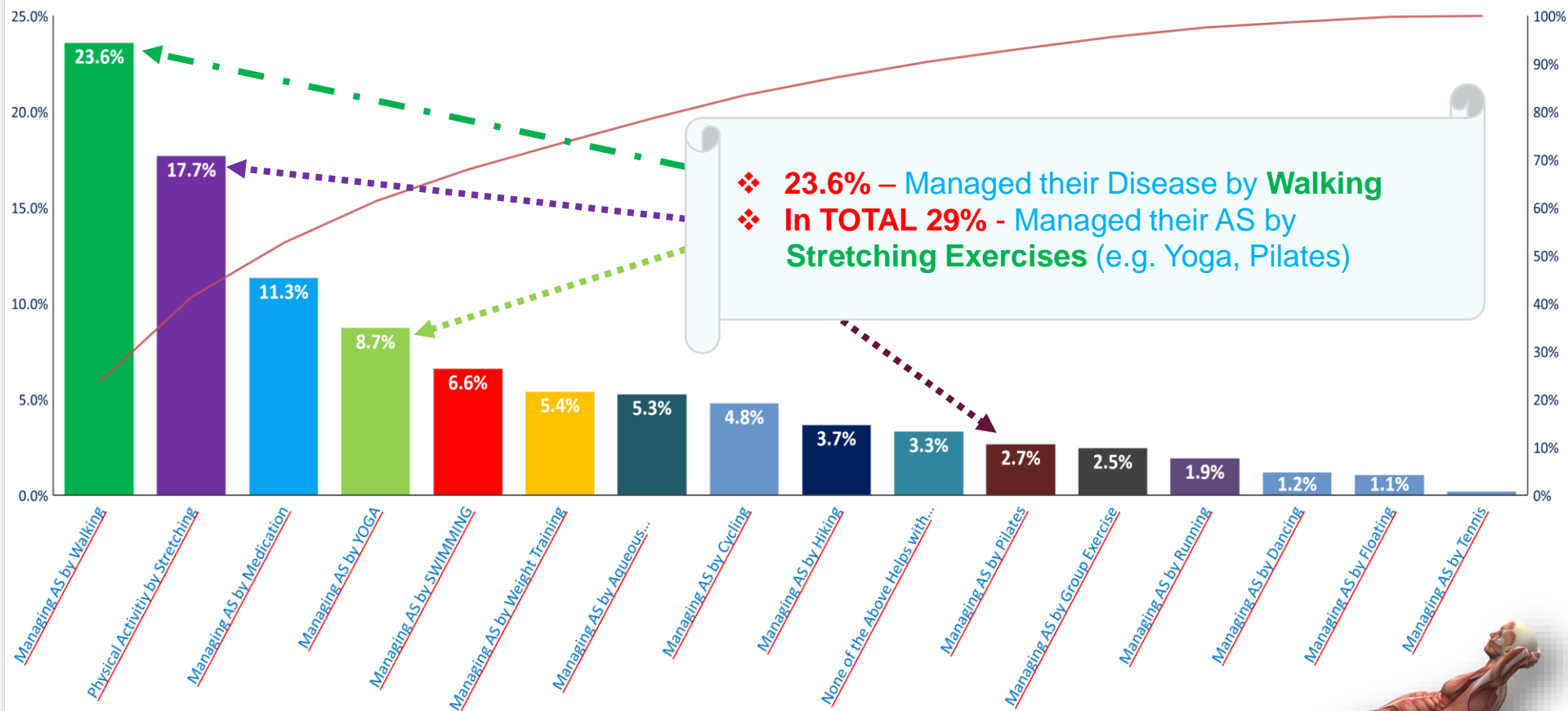


➤ 19.3% of the patients were Restricted Doing Sport

➤ The Majority were Restricted other activities in their private and social life (e.g. intimacy, vacation)

Wellness – Managing AS by EXERCISE

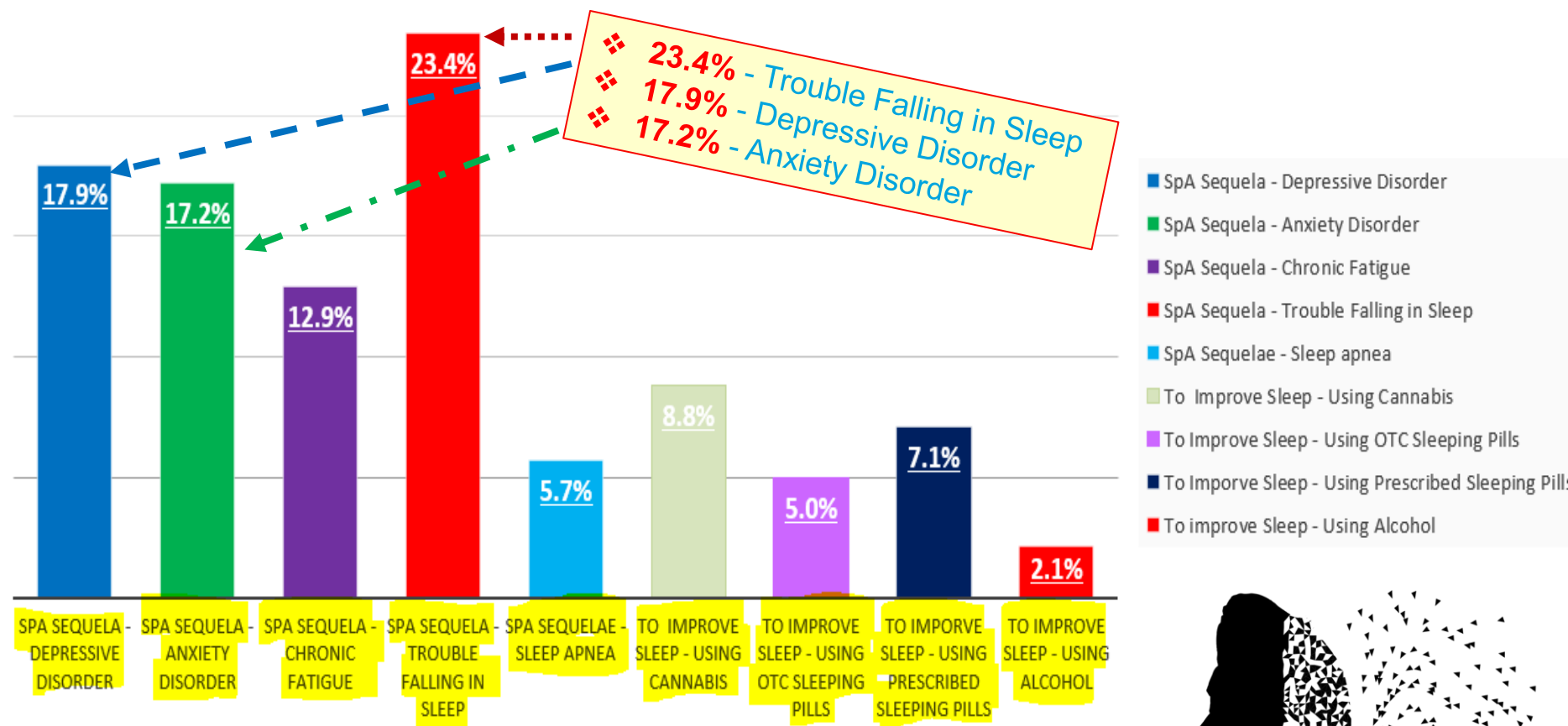
Percentage of the Physical Activities Helping with AS Management





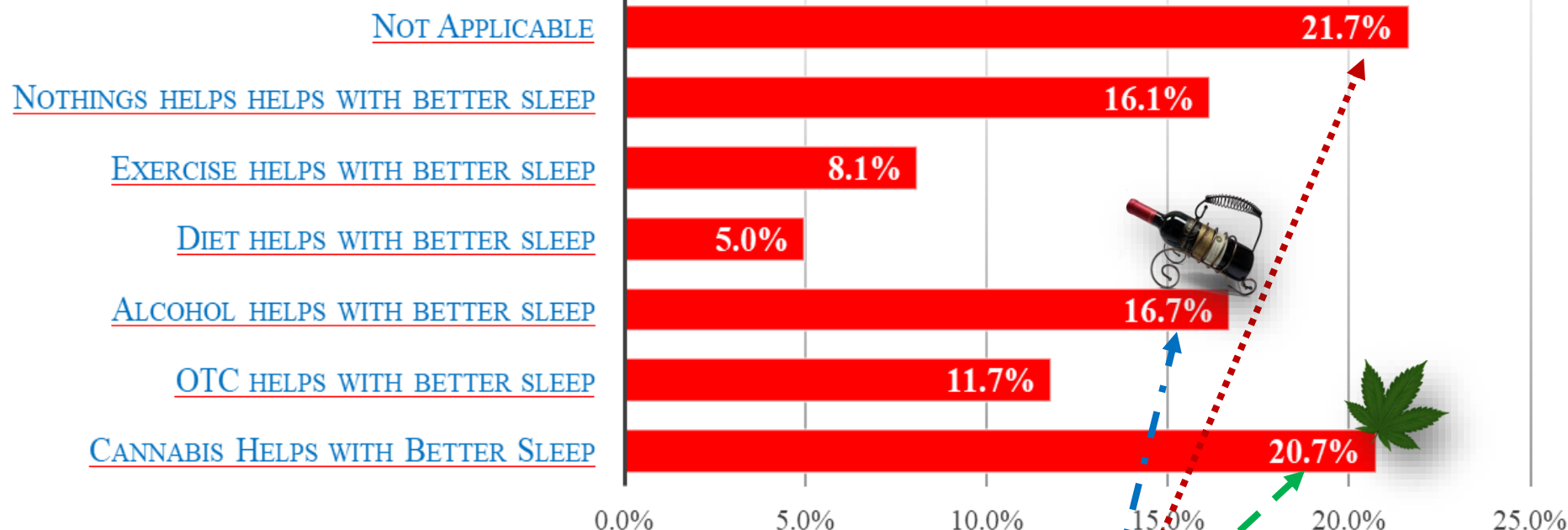
Psychological Wellness – DSM5 Approach

Associated Psychological Disorders with Ankylosing Spondylitis



Sleep Management

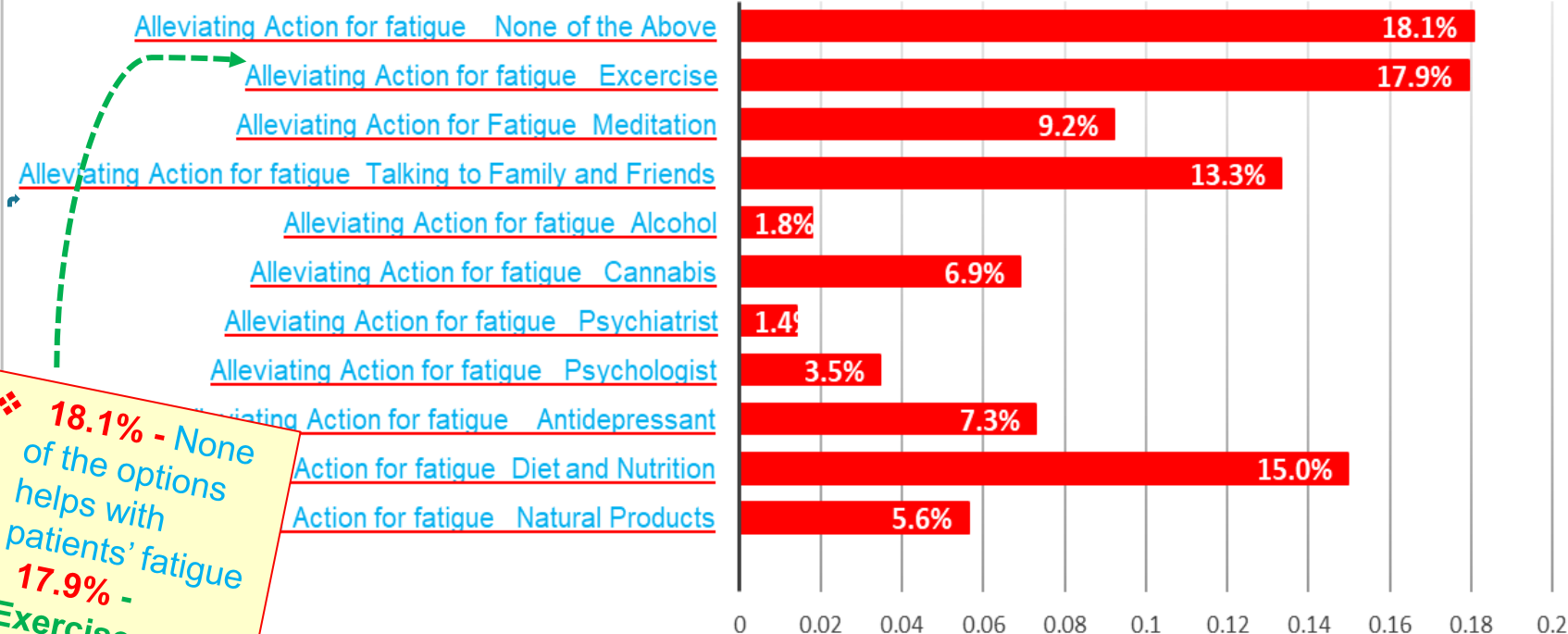
BETTER SLEEP MANAGEMENT



- ❖ 21.7% - Nothing Helped
- ❖ 20.7% - Cannabis Helped
- ❖ 16.7% - Alcohol Helped with their sleep

Wellness – Managing Fatigue

Fatigue and Alleviating Actions



❖ 18.1% - None of the options helps with patients' fatigue

❖ 17.9% - Exercise improves fatigue

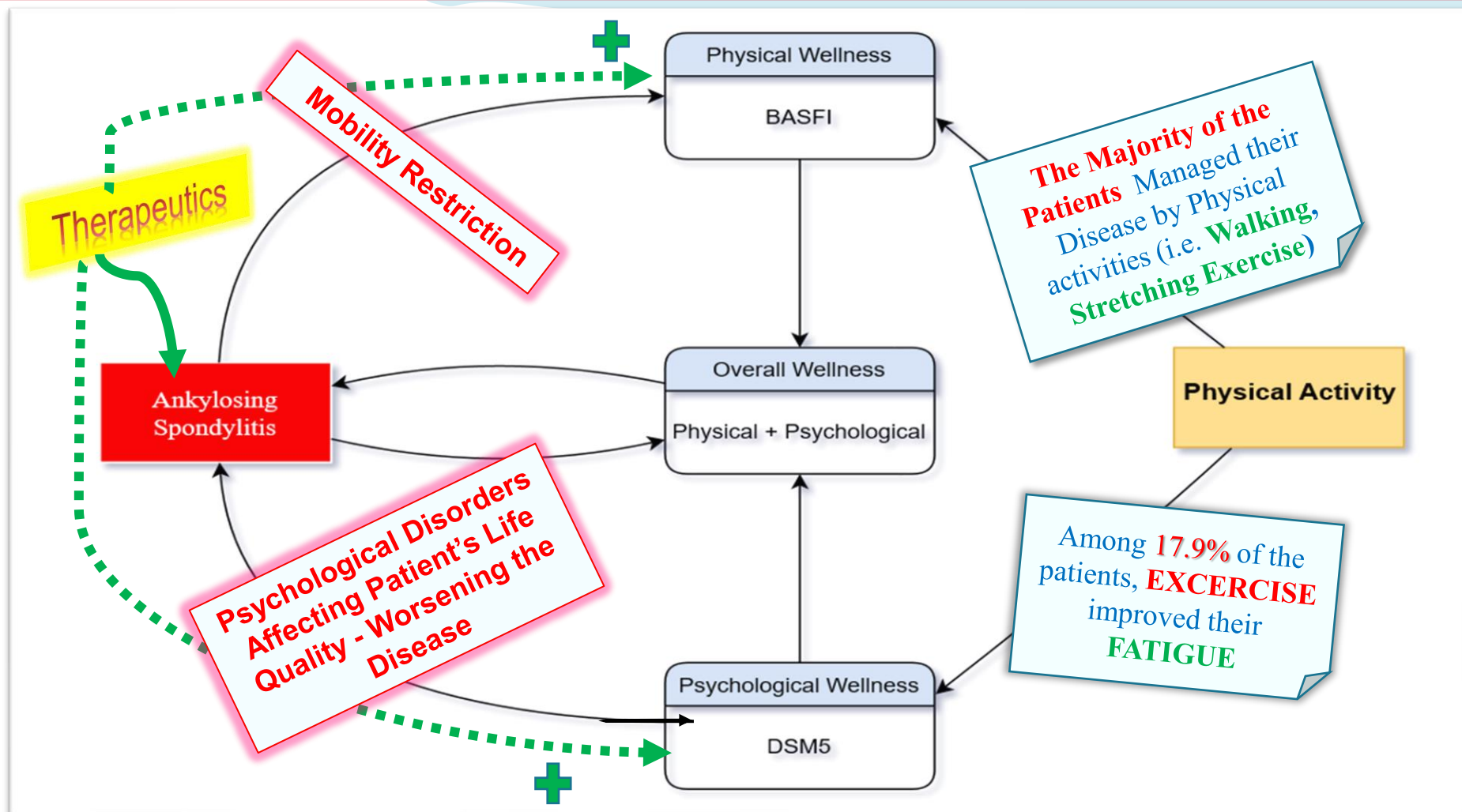




Discussion AND Conclusion

- ⌘ **Confounding Bias** - some repetitive questions and their implication in the validity of the data
- ⌘ The onset of the disease tends to be before age 45 and in this study the majority of the patients were aged between 41-50
- ⌘ Physical Activity - **Wellness Implications**
- ⌘ Replication of the findings for the prospective studies - Further **Observational** or **Hypothesis** Testing – **Health Promotion**

Summary



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Thank
you!