

Article title

Ankle Fractures: A Systematic Review of Patient Reported Outcome Measures and their measurement properties

Journal name

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Online Resource 3 Hypotheses for assessing construct validity of PROMs

| PROM under study | Reference | Comparator instrument/domains | Hypothesis number (direction) |
|--|--------------------------|---|---|
| AAOS-FAOQ Global foot and ankle scale | Zelle 2017 | SF-36: PCS MCS | 2 (+) 3 (+) |
| AAOS-FAOQ Shoe comfort scale | Zelle 2017 | SF-36: PCS MCS | 2 (+) 3 (+) |
| LEFS | Garratt 2018, Lin 2009 | OMAS | 1 (+) |
| LEFS | Garratt 2018 | SEFAS | 1 (-) |
| LEFS | Garratt 2018 | EQ-5D-3L domains: - mobility - self-care - usual activities - pain/discomfort - anxiety/depression | 2 (-) 2 (-) 2 (-) 2 (-) 2 (-) |
| LEFS | Garratt 2018 | EQ-5D-3L index | 2 (-) |
| LEFS | Garratt 2018 | SF-36 PF scale | 2 (+) |
| LEFS | Repo 2017 | 15D domains: - mobility - usual activities - discomfort and symptoms - vitality | 1 (+) 1 (+) 2 (+) 2 (+) |
| MAQ-ADL | Greve 2018 | FAAM-ADL | 1 (+) |
| MAQ-ADL | Greve 2018 | FAOS-ADL | 1 (+) |
| MAQ-pain | Greve 2018 | FAOS-pain | 1 (+) |
| OMAS | Büker 2017, Nilsson 2013 | GSRF | 1 (-) |
| OMAS | Büker 2017, Nilsson 2013 | FAOS domains: - QoL - symptoms/stiffness - pain - ADL - sport | 1 (+) 1 (+) 1 (+) 1 (+) 1 (+) |
| OMAS | McKeown 2021 | MOxFQ-index ¹ | 1 (-) |
| OMAS | McKeown 2021 | MOxFQ-domains ¹ : - walking/standing - pain - social interaction | 1 (-) 1 (-) 1 (-) |
| OMAS | McKeown 2021 | EQ-5D-5L domains: - mobility - self-care - usual activities - pain/discomfort - anxiety/depression | 2 (-) 2 (-) 2 (-) 2 (-) 2 (-) |
| OMAS | McKeown 2021 | EQ-5D-5L index | 2 (+) |

| PROM under study | Reference | Comparator instrument/domains | Hypothesis number (direction) |
|-------------------------|---------------------------|--------------------------------------|--------------------------------------|
| OMAS | McKeown 2021 | EQ-VAS | 2 (+) |
| OMAS | McKeown 2021 | DRI | 2 (-) |
| OMAS | Garratt 2018 | SEFAS | 1 (-) |
| OMAS | Garratt 2018 | LEFS | 1 (+) |
| OMAS | Garratt 2018 | EQ-5D-3L domains | |
| | | - mobility | 2 (-) |
| | | - self-care | 2 (-) |
| | | - usual activities | 2 (-) |
| | | - pain/discomfort | 2 (-) |
| | | - anxiety/depression | 2 (-) |
| OMAS | Garratt 2018 | EQ-5D-3L index | 2 (+) |
| OMAS | Garratt 2018 | SF-36 PF | 2 (+) |
| OMAS | Ponzer 1999 | SF-36 domains: | |
| | | - PF | 2 (+) |
| | | - role physical | 2 (+) |
| | | - pain | 2 (+) |
| | | - general health | 2 (+) |
| | | - social functioning | 2 (+) |
| | | - energy/fatigue | 3 (+) |
| | | - role emotional | 3 (+) |
| | | - mental health | 3 (+) |
| OMAS | Ponzer 1999 | VAS-physical health | 2 (-) |
| OMAS | Ponzer 1999 | VAS-mental health | 3 (-) |
| OMAS | Turhan 2017 | FAAM: | |
| | | - ADL | 1 (+) |
| | | - sports | 1 (+) |
| OMAS | Turhan 2017, Shah 2007 | SF-12 PCS | 2 (+) |
| OMAS | Shah 2007 | SF-12 MCS | 3 (+) |
| PROMIS LE CAT | Gausden 2018 | FAOS domains: | |
| | | - QoL | 2 (+) |
| | | - symptoms/stiffness | 1 (+) |
| | | - pain | 1 (+) |
| | | - ADL | 1 (+) |
| | | - Sport | 1 (+) |
| PROMIS LE CAT | Gausden 2018 | OMAS | 1 (+) |
| PROMIS PF ver 1.2 CAT | Gausden 2018 | FAOS domains: | |
| | | - QoL | 2 (+) |
| | | - symptoms/stiffness | 1 (+) |
| | | - pain | 1 (+) |
| | | - ADL | 1 (+) |
| | | - sport | 1 (+) |
| PROMIS PF ver 1.2 CAT | Gausden 2018 | OMAS | 1 (+) |

| PROM under study | Reference | Comparator instrument/domains | Hypothesis number (direction) |
|---|---------------------|--------------------------------------|--------------------------------------|
| SEFAS | Garratt 2018 | OMAS | 1 (-) |
| SEFAS | Garratt 2018 | LEFS | 1 (-) |
| SEFAS | Garratt 2018 | EQ-5D-3L domains | |
| | | - mobility | 2 (-) |
| | | - self-care | 2 (-) |
| | | - usual activities | 2 (-) |
| | | - pain/discomfort | 2 (-) |
| | | - anxiety/depression | 2 (-) |
| SEFAS | Garratt 2018 | EQ-5D-3L index | 2 (-) |
| SEFAS | Garratt 2018 | SF-36 PF | 2 (-) |
| SMFA ADL | Obremskey 2007 | SF-36 PF | 1 (-) |
| SMFA bother index | Obremskey 2007 | SF-36 domains: | |
| | | - physical role limitations | 2 (-) |
| | | - emotional role limitations | 2 (-) |
| SMFA dysfunction index | Obremskey 2007 | SF-36 PF | 2 (-) |
| SMFA emotional | Obremskey 2007 | SF-36 domains: | |
| | | - emotional role limitations | 2 (-) |
| | | - mental health | 2 (-) |
| | | - energy/fatigue | 2 (-) |
| SMFA mobility | Obremskey 2007 | SF-36 PF | 2 (-) |
| TEFTOM (only TOM part) | Suk 2013, Fang 2020 | FAOS domains: | |
| | | - QoL | 2 (+) |
| | | - symptoms/stiffness | 2 (+) |
| | | - pain | 2 (+) |
| | | - ADL | 2 (+) |
| | | - sport | 2 (+) |
| TEFTOM (only TOM part) | Suk 2013, Fang 2020 | SF-36 PF | 2 (+) |
| TEFTOM (only TOM part) | Suk 2013, Fang 2020 | SF-36 PCS | 2 (+) |
| TEFTOM (only TOM part) | Suk 2013, Fang 2020 | AAOS | 1 (+) |
| VAS-FA | Repo 2018 | LEFS | 1 (+) |
| VAS-FA | Repo 2018 | 15D index | 2 (+) |
| WOMAC ver 3.0 ankle/foot (index score) | Ponkilainen 2019 | LEFS | 1 (-) |
| WOMAC ver 3.0 ankle/foot (index score) | Ponkilainen 2019 | VAS-FA | 1 (-) |
| WOMAC ver 3.0 ankle/foot (index score) | Ponkilainen 2019 | 15D index | 2 (-) |
| WOMAC ver 3.0 ankle/foot (physical function subscale) | Ponkilainen 2019 | LEFS | 1 (-) |

¹ foot and ankle

Abbreviations:

+ = positive correlation

- = negative correlation

AAOS-FAOQ = American Academy of Orthopaedic Surgeons Foot and Ankle Outcomes Questionnaire

ADL = activities of daily living

A-FORM = Ankle Fracture Outcome of Rehabilitation Measure

CAT = Computer Adaptive Test

DRI = Disability Rating Index

FAAM = Foot and Ankle Ability Measure

FAOS = Foot and Ankle Outcome Score

GSRF = Global Self-Rated Scale

LE = lower extremity

LEFS = Lower Extremity Functional Scale

MAQ = Munich Ankle Questionnaire

MCS = Mental Component Score

MOxFQ = Manchester-Oxford Foot Questionnaire

OMAS = Olerud-Molander Ankle Score

PCS = Physical Component Score

PF = physical function

PROMIS = Patient-Reported Outcomes Measurement Information System

QoL = quality of life

ROM = range of motion

SEFAS = Self-reported Foot and Ankle Score

SMFA = Short Musculoskeletal Function Assessment

TEFTOM = Trauma Expectation Factor Trauma Outcome Measure

VAS = Visual Analogue Scale

VAS-FA = Visual Analogue Scale Foot and Ankle

WOMAC = Western Ontario and McMaster Universities Osteoarthritis Index