**Appendix 5: Equity-relevant data using the PROGRESS-Plus framework**

| **Reference** | **Place of residence** | **Race/ ethnicity/ culture** | **Occupation** | **Gender/sex** | **Religion** | **Education** | **Socioeconomic status** | **Social capital** | **Plus** | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Personal characteristics associated with discrimination** | **Features of relationships** | **Time-dependent relationships** |
| Ala 2021 | Iran | - | - | 66 males and 14 females | - | - | - | - | mean age of 48 years | - | - |
| Asha 2021 | Australia | **-** | - | 1139 (55.9%) males | - | - | - | - | median age 54 years (IQR: 29-78) | - | admitted to the ED for trauma, so physically/ mentally in a more vulnerable situation |
| Ay 2011 | Turkey | - | - | 33 females and 27 males | - | - | - | - | median age 27 years (range 19-53) | - | - |
| Bednar 2004 | Canada | - | - | - | - | - | - | - | - | - | - |
| Ben-Galim 2010 | USA | - | - | 6 women and 6 men | - | - | - | - | 64-88 years old | - | - |
| Bruton 2024 | New South Wales (Australia) | - | - | 61% male | - | - | - | - | 7% 0 to <16 years, 59% 16-64 years, and 34% ≥65 years | - | Ambulance-transported patients, so physically/ mentally in a more vulnerable situation |
| Castro-Marin 2020 | Arizona (USA) | - TI cases:  pre-SMR: 73% white, 3.1% black or African American, 16% Hispanic/Latino, 1% Asian or PI post-SMR: 74.6% white, 4.4% black or African American, 15.5% Hispanic/Latino, 1.4% Asian or PI  - P-ST cases:  pre-SMR: 71.3% white, 3.1% black or African American, 17% Hispanic/Latino, 1% Asian or PI post-SMR: 73.9% white, 4.4% black or African American, 15.9% Hispanic/Latino, 1.3% Asian or PI  - V-ST cases:  pre-SMR: 80.6% white, 1.4% black or African American, 12% Hispanic/Latino, 1.1% Asian or PI post-SMR: 82.6% white, 2.2% black or African American, 11.5% Hispanic/Latino, 1.4% Asian or PI | **-** | TI cases:  pre-SMR: 54.2% female post-SMR: 55.1% female  - P-ST cases:  pre-SMR: 52.2% female post-SMR: 53.6% female  - V-ST cases:  pre-SMR: 55.5% female post-SMR: 55.8% female | - | - | - | - | - TI cases:  pre-SMR: median age 57 (IQR:31-78) post-SMR: median age 58 (IQR: 32-79)  - P-ST cases:  pre-SMR: median age 54 (IQR: 30-77) post-SMR: median age 57 (IQR: 32-79)  - V-ST cases:  pre-SMR: median age 70 (IQR: 48-83) post-SMR: median age 70 (IQR: 50-84) | - | - TI cases:  pre-SMR: 15% discharged to skilled nursing facility, assisted living facility, rehabilitation facility, or long-term care facility; 1.5% expired/hospice post-SMR:16.9% discharged to skilled nursing facility, assisted living facility, rehabilitation facility, or long-term care facility; 1.6% expired/hospice  - P-ST cases:  pre-SMR: 8.6% discharged to skilled nursing facility, assisted living facility, rehabilitation facility, or long-term care facility; 3.5% expired/hospice post-SMR: 10.4% discharged to skilled nursing facility, assisted living facility, rehabilitation facility, or long-term care facility; 2.7% expired/hospice  - V-ST cases:  pre-SMR: 34.8% discharged to skilled nursing facility, assisted living facility, rehabilitation facility, or long-term care facility; 3.5% expired/hospice post-SMR: 40.4% discharged to skilled nursing facility, assisted living facility, rehabilitation facility, or long-term care facility; 4.4% expired/hospice |
| Chen 2022 | Australia, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, United Arab Emirates and Vietnam. Korea and Malaysia accounted for 97.1% of the study group. | - | - | 339 females (44.7%) and 420 males (55.3%) | - | - | - | - | Median age of all patients: 58 years (IQR 41–72);  Median age of immobilized: 54 years (IQR 38–67)  Median age of non-immobilized: 65 years (IQR 49–76)  (May suggest some age discirimination with less immobilization in older population) | - | EMS-transported patients, so physically/ mentally in a more vulnerable situation |
| Chi 2005 | Taiwan | - | - | all female | - | students at National Cheng Kung University | - | - | mean age 23 years (range 20-28) | - | - |
| Clemency 2021 | USA | - | - | - SI (2013-2014): 354 (64.5%) males  - SMR (2016-2017): 395 (63.4%) males | - | - | - | - | - SI (2013-2014): mean age 52.7 (IQR=33)  - SMR (2016-2017): mean age 50.9 (IQR=31) | - | EMS-transported patients with spine or spinal cord injury due to blunt trauma, so physically/ mentally in a more vulnerable situation |
| Colak 2020 | Turkey | - | - | 51 males and 43 females | - | - | - | - | mean age 42+/-16.1 years | - | trauma patients admitted to the ED, so physically/ mentally in a more vulnerable situation |
| Eisner 2022 | USA | - | - | 20 females and 10 males | - | - | - | - | median age 22 years (IQR: 18-24) | - | - |
| Engsberg 2013 | USA | - | 4 EMS and 6 students | 6 females and 4 males | - | 4 EMS and 6 students | - | - | 28±7 years | - | - |
| Evans 2013 | UK | - | - | 12 females and 7 males | - | - | - | - | 18-40 years (mean age 29 years; range 18-38)) | - | - |
| Gabrieli 2019 | Italy | - | - | all males | - | - | - | - | mean age 26 years | - | - |
| Gavin 2003 | USA | - | - | 10 males and 10 females | - | - | - | - | 21-44 years | - | - |
| Ham 2016 | The Netherlands | - | - | 198 males (57.9%) and 144 females (42.1%) | - | - | - | - | mean age 45 years (IQR 27-61) | - | admitted to the ED, so physically/ mentally in a more vulnerable situation |
| Hernandez 2019 | Spain | - | EMS | 10 males and 6 females | - | EMS | - | - | mean age 46 years | - | - |
| Holla 2012 | The Netherlands | - | - | 6 males and 4 females | - | - | - | - | mean age 32.9 years (range: 23-47) | - | - |
| Hudson 2023 | UK | - | - | 52.2% male | - | - | - | - | 21-105 years; divided into 2 cohorts: 11 older (mean age 84 years) and 12 younger (mean age 25 years) | - | - |
| Hunt 2001 | UK | - | - | 18 males and 12 females | - | - | - | - | age range 17-70 years | - | Patients with severe traumatic brain injury in the neurosurgical ICU, so in a more vulnerable situation. Written consent for inclusion in the study was provided by that patients’ next of kin. |
| James 2004 | USA | - | - | all males | - | - | - | - | - | - | - |
| Jao 2023 | USA (New York state) | 82.1% white and 7.2% black (cervical spine immobilization group) vs 91.4% white and 4.3% black (no cervical spine immoblization group) | - | 55.5% male (cervical spine immobilization group) vs 65.4% male (no cervical spine immoblization group) | - | - | - | - | 54 years (cervical spine immobilization group) vs 76 years (no cervical spine immoblization group) | - | EMS-transported trauma patients with cervical spine injuries, so physically/ mentally in a more vulnerable situation |
| Jung 2023 | China, India, Japan, Laos, Malaysia, Philippines, Korea, Singapore, Taiwan, Thailand, UAE, and Vietnam | - | - | - with cervical spine immobilization: 4178 (28.2%) females  - without cervical spine immobilization: 17,622 (39.5%) females  - total: 21,800 (36.7%) females | - | - | - | - | - with cervical spine immobilization: 3366 (22.7%) older than 65 years  - without cervical spine immobilization: 12,762 (28.6%) older than 65 years  - total: 16,128 (27.1%) older than 65 years | - | EMS-transported trauma patients, so physically/ mentally in a more vulnerable situation. In addition, overall, 21.2% reported acute alcohol use, making them even more vulnerable. |
| Karason 2014 | Iceland | - | - | 5 males and 5 females | - | - | - | - | mean age 27.4 years (range 21-28) | - | - |
| Kim 2018 | Korea | - | probably students at Daejeon Health Institute of Technology | 15 males and 15 females | - | - | - | - | 21-25 years | - | - |
| Kolb 1999 | USA | - | - | - | - | - | - | - | An unknown number of patients suffered from obesity, making them more prone to discrimination | - | patients presenting themselves to the ED, but needing a lumbar punction, so mentally and/or physically in more vulnerable situation |
| Krell 2006 | USA | - | participants from the prehospital and residency training programs | - | - | participants from the prehospital and residency training programs | - | - | - | - | - |
| Kroeker 2019 | UK | - | - | 9 males and 8 females | - | - | - | - | 22-29 years | - | - |
| Ladny 2018 | Poland | - | paramedics | - | - | - | - | - | - | - | - |
| Ladny 2020 | Poland | - | - | 39 males and 21 females | - | - | - | - | median age 34 years (IQR: 30-42.5) | - | - |
| Lee 2023 | Taipei (Taiwan) | - | - | 59.7% male | - | - | - | - | median age 62 years (IQR: 45-77 years) | - | patients hospitalised for neck and head trauma, so mentally and/or physically in more vulnerable situation |
| Leenen 2020 | The Netherlands | - | nurses at a surgery department of a tertiary hospital | 45 females and 15 males | - | nurses | - | - | median age 23.2 years (24-40) | - | - |
| Leonard 2012 | Washington (USA) | - | N/A (children) | 53% male | - | - | - | - | all children (<18 years) | - | EMS-transported children with possible spinal injury, so physically/ mentally in a more vulnerable situation |
| Liao 2018 | Heidelberg (Germany) | - | - | 5 males and 1 female | - | - | - | - | age at death 82 years (76-100 years) | - | - |
| Lin 2011 | Kaohsiung (Taiwan) | - | - | 2319 females and 2820 males | - | - | - | - | mean age 38 years (range: 10-96) | - | EMS-transported patients involved in motorcycle crashes at low or moderate speeds, so physically/mentally in a more vulnerable situation |
| Mahshidfar 2013 | Tehran  (Iran) | - | - | 49 males and 11 females | - | - | - | - | Mean age 30.25±2.95 years (long backboard group) and 35.50±3.13 years (vacuum mattress splint group) | - | Trauma victims with a possible spinal trauma, so physically/mentally in a more vulnerable situation |
| Maissan 2018 | Rotterdam (The Netherlands) | - | - | 22 males and 23 females | - | recruited at the medical library of Erasmus University Medical Center, so probably medically educated | - | - | mean age 20.3±1.9 years (range: 18-31) | - | - |
| March 2002 | USA | - | - | 13 males and 7 females | - | - | - | - | - | - | - |
| McDonald 2021 | Mannitoba (Canada) | - | - | 6 female, 3 male | - | - | - | - | - | - | adult trauma patients with suspected spine injuries attended by prehospital EMS, so mentally/ physically in a more vulnerable situation |
| McGrath 2009 | USA | - | Drexel University College of Medicine emergency medicine residency program | - | - | Drexel University College of Medicine emergency medicine residency program | - | - | - | - | - |
| Mitra 2024 | Melbourne (Australia) | - | - | 62% male (before) and 61.5% male (after implementation) | - | - | - | - | 25 years or younger: 17% (before) vs 13% (after implementation) 26-50 years: 33% vs 28% 51-65 years: 18% vs 21% older than 65 years: 31% vs 39% | - | trauma patients, so mentally/ physically in a more vulnerable situation |
| Mobbs 2002 | Australia | - | - | 8 males and 2 females | - | - | - | - | mean age 29 years (range: 15-47) | - | trauma patients, so mentally/physically in a more vulnerable situation |
| Nilhas 2022 | Wichita (USA) | 84% caucasian | - | - | - | - | - | - | - | - | trauma patients with documented spinal injury brought to hospital by EMS, so mentally/physically in a more vulnerable situation. In addition, 26,4 to 43.5% of patients had a positive alcohol test, making them even more vulnerable. |
| Nutbeam 2021 | UK | - | support roles at Fire and Rescue Services | 7 females and 3 males | - | - | - | - | mean age 39 years (range 21-59) | - | - |
| Oosterwold 2017 | The Netherlands | - | - | 59% male | - | - | not reported, likely all strata | - | - | - | trauma patients transported to hospital, so mentally/physically in a more vulnerable situation |
| Porter 2019 | USA | - | - | - | - | - | - | - | 25-45 years | - | - |
| Pryce 2016 | Manitoba (Canada) | - | - | 10 males and 3 females | - | - | - | - | mean age 30 years (range 21-57 years) | - | - |
| Rahmatalla 2019 | USA | - | university students | all males | - | university students | - | - | mean age 22.8±3.8 years | - | - |
| Richter 2001 | Unclear  (Germany? USA?) | - | - | - | - | - | - | - | - | - | - |
| Roebke 2023 | USA | - | - | - | - | - | - | - | - | - | - |
| Russell 2024 | UK | - | local university population | 10 males and 15 females | - | - | - | - | median age 21 years (range: 18-38 years) | - | - |
| Schneider 2007 | USA | - | - | 25 females and 20 males | - | - | - | - | Mean age 34.7±10 years (range 22-61) | - | - |
| Stone 2010 | USA | - | resident physicians, medical students, and nurses in an ED | 22 males and 20 females | - | resident physicians, medical students, and nurses in an ED | - | - | mean age 27 years (range: 19-50 years) | - | - |
| Stroh 2001 | Fresno County (California, USA) | - | - | - | - | - | - | - | - | - | patients transported by EMS, so mentally/physically in a more vulnerable situation |
| Szarpak 2018 | Poland | - | Firefighters | all males | - | - | - | - | 18-50 years (mean age 34 years, IQR 29-37) | - | - |
| Tescher 2007 | USA | - | - | 24 males and 24 females | - | - | - | - | 18-60 years (mean age 38.9 years) | - | - |
| Tescher 2016 | USA | - | - | 24 males and 24 females | - | - | - | - | 18-65 years | - | - |
| Totten 1999 | USA | - | - | 20 males and 19 females | - | - | - | - | 7-85 years (11 aged 7-12 years, 11 young adults and 17 adults >60 years) | - | - |
| Uzun 2020 | Germany | - | - | 2 females and 1 male | - | - | - | - | 19-28 years | - | - |
| van de Breevaart 2023 | The Netherlands | - | - | all patients: 59% male; non-immobilized spinal fracture patients: 36% male (post-) and 32% male (pre-implementation) | - | - | - | - | all patients: mean age 44 (post-) and 42 (pre-implementation) years; non-immobilized spinal fracture patients: mean age 68 (post-) and 59 (pre-implementation) years | - | patients with presumed spinal injury transported by EMS, so mentally/physically in a more vulnerable situation |
| Worsley 2018 | UK | - | ‘local university population’, but could be aged between 18-65 years, so unclear if these were only students | 9 males and 6 females | - | - | - | - | mean age 24 years (range 24-31 years) | - | - |
| Woster 2018 | USA | - | hospital employees | 5 males and 15 females | - | - | - | - | mean age 37.1 years | - | - |
| Yard 2019 | USA | - | emergency medicine residents, faculty of the residency program, and rotating medical students at a level II trauma center | 30% female | - | emergency medicine residents, faculty of the residency program, and rotating medical students at a level II trauma center | - | - | mean age 29.7±4.57 years (range: 25-50 years) | - | - |
| Yazici 2024 | Turkey | - | - | 112 males and 57 females | - | - | - | - | median age 40 years (IQR: 25-55) | - | patients admitted to the ED, so mentally/physically in a more vulnerable situation |
| Zhang 2005 | USA | - | - | 10 males and 10 females | - | - | - | - | mean age 24 years | - | - |