**ONLINE SUPPLEMENT**

**Supplementary Figure 1: Used Cardiac Rehabilitation Capacity by SEAR Country with Programs\***



\*total number of patients served per year per country (i.e., volume=median number of patients a program served multiplied by total number of programs in a country) divided by national cardiac rehabilitation capacity, which represents proportion of available spots which are not used (i.e., 100% reflects all available spots are used annually). Data from Thailand were not available.

SEAR, South-East Asia Region

**Supplementary Table 1. Estimated Annual Ischemic Heart Disease Incidence (2016) in SEAR Countries without Cardiac Rehabilitation**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Country** | **Country Income Classification** | **Human Development Index\*** | **IHD Incidence** | **IHD Incidence/ 100,000†** |
| Bhutan | LMIC | 0.607 | 1,319 | 165 |
| Maldives | UMIC | 0.701 | 625 | 172 |
| Myanmar | LMIC | 0.556 | 108,283 | 199 |
| North Korea | LIC | NA | 48,117 | 182 |
| Timor-Leste | LMIC | 0.605 | 1,695 | 146 |

IHD, ischemic heart disease; LMIC, lower-middle income country; UMIC, upper-middle income country; LIC, low-income country; NA, not available; SEAR, South-East Asia Region

\*from United Nations Development Program (Jahan S. Human Development Report 2016 Human Development for Everyone. New York; 2016, http://hdr.undp.org/sites/default/files/2016\_human\_development\_report.pdf)

†obtained from Global Burden of Disease study (University of Washington, Institute for Health Metrics and Evaluation (IHME). Global Burden of Disease Results [Internet]. Seattle, WA: IHME, 2016. http://ghdx.healthdata.org/gbd-results-tool, (accessed 6 December 2017)

**Supplementary Table 2: CR Funding Source and Cost to Program to Serve 1 Patient by SEAR Country with CR**

|  |  |  |
| --- | --- | --- |
| **Country** | **Funding Source****n (%)** | **Cost to Serve 1 Patientfor a Complete Program****(PPP2016)** |
| **Public** | **Private** | **MultipleSources** |
| Bangladesh | 0 | 1 (100.0%) | 0 | 336.38 |
| India | 1 (5.6%) | 16 (88.9%) | 1 (5.6%) | 1,027.12±2,030.27† |
| Indonesia | 5 (55.6%) | 0 | 4 (44.4%) | 276.05±14.21† |
| Sri Lanka | 1 (100%) | 0 | 0 | - |
| Nepal | 1 (100%) | 0 | 0 | - |
| **SEAR Total**  | **8 (26.7%)** | **17 (56.7%)** | **5 (16.7%)** | **844.38±1,762.77†** |
| **SEAR Median****(Q25-Q75)** |  |  |  | **284.80****(194.08-722.91)** |
| **Global** | **584 (56.5%)\*** | **185 (17.9%)\*** | **264 (25.6%)** | **1549.42±1,666.01†** |
| **Global****Median****(Q25-Q75)** |  |  |  | **976.25****(486.89-1956.04)\*** |

SEAR, South-East Asia Region; CR, cardiac rehabilitation; PPP, Purchasing Power Parity (http://eppi.ioe.ac.uk/costconversion/default.aspx)

†mean ± standard deviation for a complete program. PPP is equivalent to 2016 $USD

USD, United States Dollars

- response about CR cost was not provided by any respondent in the country

\*significant difference *(P<.*05) between SEAR and global using Chi-Square testor the Mann-Whitney U test as applicable

Note: Due to missing data, percentages are computed where the denominator is the number of valid responses from responding programs

**Supplementary Table 3: Most Common Cardiac Rehabilitation Indications Accepted by SEAR Country with Programs, and Versus Other Countries**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Country (n) | CABG | Post-Myocardial infarction / acute coronary syndrome | Percutaneous coronary intervention | Heart failure | Stable coronary artery disease | Rheumatic heart disease |
| Bangladesh (n=1) | 1 (100.0%) | 1 (100.0%) | 0 (0.0%) | 1 (100.0%) | 0 (0.0%) | 1 (100.0%) |
| India (n=18) | 13 (100.0%) | 13 (100.0%) | 10 (76.9%) | 11 (84.6%) | 10 (76.9%) | 6 (46.2%) |
| Indonesia (n=10) | 8 (100.0%) | 8 (100.0%) | 8 (100.0%) | 8 (100.0%) | 6 (75.0%) | 2 (25.0%) |
| Nepal (n=1) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) |
| Sri Lanka (n=2) | 2 (100.0%) | 2 (100.0%) | 2 (100.0%) | 1 (50.0%) | 2 (100.0%) | 1 (50.0%) |
| SEAR Total (n=32) | **25 (100.0%)** | **24 (96.0%)** | **21 (84.0%)** | **22 (88.8%)** | **19 (76.0%)** | **11 (44.0%)** |
| Global(N=1050) | **792 (95.7%)** | **809 (97.5%)** | **799 (96.5%)\*** | **735 (88.8%)** | **673 (81.3%)** | **424 (51.2%)** |

CABG, coronary artery bypass graft; HF, heart failure; PCI, percutaneous coronary intervention; SEAR, South-East Asia Region

\*significant difference *(P=.*013) between SEAR and global programs for PCI indication using Fisher’s Exact test

Note: Due to missing data, percentages are computed where the denominator is the number of valid responses from responding programs.

**Supplementary Table 4. Non-Cardiac Indications Served in Cardiac Rehabilitation Programs in SEAR**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Country (n) | High-Risk / Primary Prevention | Diabetes | Chronic Lung Disease | Intermittent Claudication/ Peripheral Vascular Disease | Stroke / Transient Ischemic Attack | Cancer |
| Bangladesh (n=1) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) |
| India (n=18) | 11 (84.6%) | 9 (69.2%) | 8 (61.5%) | 8 (61.5%) | 5 (38.5%) | 7 (53.8%) |
| Indonesia (n=10) | 3 (37.5%) | 3 (37.5%) | 1 (12.5%) | 4 (50.0%) | 1 (12.5%) | 0 (0.0%) |
| Nepal (n=1) | 1 (100.0%) | 1 (100.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| Sri Lanka (n=2) | 2 (100.0%) | 1 (50.0%) | 1 (50.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| SEAR Total (n=32) | **18 (72.0%)** | **15 (60.0%)** | **10 (40.0%)** | **12 (48.0%)** | **7 (28.0%)** | **7 (28.0%)** |
| Global†(N=1050) | **475 (57.4%)** | **406 (49.0%)** | **330 (39.9%)** | **411 (49.6%)** | **248 (30.0%)** | **156 (18.8%)** |

SEAR, South-East Asia Region

†no significant difference between SEAR and the other countries (i.e., global) in serving of any non-cardiac indications (using Fisher’s Exact Test for cancer and Chi-Square test for all other indications)

Note: Due to missing data, percentages are computed where the denominator is the number of valid responses from responding programs

**Supplementary Table 5. Risk Factors Assessed in Cardiac Rehabilitation Programs by SEAR Country**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Blood Pressure** | **Adiposity** | **Tobacco Use** | **Lipids** | **Glucose/ HbA1c** | **Physical Inactivity** | **Poor Diet** | **Depression** | **Total**† |
| Bangladesh (n=1) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 8.0 |
| India (n=18) | 15 (100.0%) | 15 (100.0%) | 14 (93.3%) | 15 (100.0%) | 13 (100.0%) | 14 (93.3%) | 11 (78.6%) | 12 (80.0%) | 7.5±0.8  |
| Indonesia (n=10) | 10 (100.0%) | 10 (100.0%) | 10 (100·0%) | 9 (90.0%) | 9 (90.0%) | 8 (80.0%) | 7 (70.0%) | 4 (40.0%) | 6.4±1.3 |
| Nepal (n=1) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 1 (100.0%) | 0 (0.0%) | 1 (100.0%) | 0 (0.0%) | 7.0 |
| Sri Lanka (n=2) | 2 (100.0%) | 2 (100.0%) | 2 (100.0%) | 2 (100.0%) | 2 (100.0%) | 1 (50.0%) | 1 (50.0%) | 2 (100.0%) | 7.0±1.4 |
| **SEAR Total (n=32)** | **29 (100.0%)** | **29 (100.0%)** | **28 (96.6%)** | **28 (96.6%)** | **26 (96.3%)** | **24 (82.8%)** | **21 (75.0%)** | **19 (65.5%)** | **7.0±1.1** |
| **Global\* (n=1050)** | **928 (99.1%)** | **900 (95.8%)** | **919 (98.0%)** | **856 (91.3%)** | **813 (88.6%)** | **879 (94.3%)\*** | **840 (90.1%)\*** | **797 (85.8%)\*** | **7.2±1.3** |

SEAR: South-East Asia Region

\*significant difference between SEAR and the other countries (i.e., global) in assessment of physical inactivity *(P=*0.021), poor diet (*P*=0.015),and depression (*P*=0.004) using Fisher’s Exact Test.

†mean ± standard deviation for total number of risk factors assessed in the country, region or globally (out of 8).

Note: Due to missing data, percentages are computed where the denominator is the number of valid responses from responding programs.

**Supplementary Table 6: Cardiac Rehabilitation Dose by SEAR Country and Versus other Countries**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Bangladeshn=1 | Indian=13 | Indonesian=5 | Nepaln=1 | Sri Lankan=2 | SEAR(n=21) | Global(N=731) | *P Value\** |
| Duration (weeks) | 1.0 | 7.5±5.7 | 5.7±2.1 | 6.0 | 20.0 | 7.7±6.8 | 10.9±9.5 | .007\* |
| Frequency(sessions / week) | 3.0 | 3.9±2.9 | 2.5±0.8 | 6.0 | 0.6±0.5 | 3.3±2.4 | 3.7±5.5 | .32 |
| Dose(# weeks x sessions/week) | 3.0 | 24.8±14.2 | 12.4±2.2 | 36.0 | 8.0 | 20.0±13.6 | 28.7±27.6 | .05 |
| Intensity(minutes / session) | 60.0 | 52.7±7.3 | 48.9±10.6 | NA | 50.0±14.1 | 51.4±8.9 | 58.6±18.6 | .01\* |
| Total CRhours(Dose x intensity/60) | 3.0 | 21.9±13.5 | 10.4±3.9 | NA | 6.7±1.9 | 16.8±12.6 | 36.2±53.3 | .01\* |

SEAR, South-East Asia Region; NA, not available; CR, cardiac rehabilitation

\*tested for difference between SEAR and other countries by Wilcoxon-Mann-Whitney

Note: mean ± standard deviation shown.