Physical Activity among Civil Servants in Government Ministry, Dar Es Salaam, Tanzania: Assessment of Knowledge, attitude and practice and population based intervention (Preliminary report)

Project team leaders
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Each year, Non Communicable diseases account for almost 50% of the global burden of disease; 60% of the 56.5 million deaths each year

80% of chronic disease deaths occur in low and middle income countries
# Deaths due to NCDs and injuries by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Morogoro</th>
<th>Hai</th>
<th>DSM</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>5%</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>6-15</td>
<td>29%</td>
<td>34%</td>
<td>34%</td>
</tr>
<tr>
<td>16-36</td>
<td>23%</td>
<td>33%</td>
<td>22%</td>
</tr>
<tr>
<td>36-60</td>
<td>29%</td>
<td>46%</td>
<td>33%</td>
</tr>
<tr>
<td>61+</td>
<td>27%</td>
<td>59%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Source: Pooled data from 1994-2002; AMMP/MOHSW, reanalysed by IHRDC
Introduction (3/5)

Prevalence of hypertension in different areas and sub-populations of Tanzania

- Dar es Salaam (African Executives): 48.9%
- Dar es Salaam (African priests): 31%
- Dar es Salaam (Ithna-Ashiari Asians): 28.5%
- Dar es Salaam (Bohra Asians): 28.2%
- Dar es Salaam (Urban nuns): 19.3%
- Dar es Salaam (Hindu Asians): 14.3%
- Dar es Salaam (Urban Africans): 10.4%
- Morogoro: 6.6%
- Kilimanjaro: 3.3%
- Mara: 2.6%

Prevalence of hypertension (%)
Physical Inactivity (1/2)

- The lack of regular physical activity (also known as a sedentary lifestyle), has been considered one of the most prevalent and worrisome public health problems in the World.

- WHO estimates that about million deaths are attributable to physical inactivity worldwide, every year.
### Physical activity
Results for adults aged 25-64 (including 96% CI)

<table>
<thead>
<tr>
<th>Results for adults aged 25-64 years (incl. 95% CI)</th>
<th>Both Sexes</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage with low levels of activity (defined as &lt;600 MET-minutes/week)</td>
<td>18.6 (13.1-24.1)</td>
<td>11.0 (7.8-14.2)</td>
<td>25.4 (17.3-33.5)</td>
</tr>
<tr>
<td>Percentage with high levels of activity (defined as ≥ 3000 MET-minutes/week)</td>
<td>62.2 (52.9-71.5)</td>
<td>71.7 (63.8-79.6)</td>
<td>53.6 (42.0-65.2)</td>
</tr>
<tr>
<td>Median time spent in physical activity per day (minutes)</td>
<td>192.9 (47.1-1440.0)</td>
<td>278.6 (88.9-1440.0)</td>
<td>132.9 (30.0-1200.0)</td>
</tr>
<tr>
<td>Percentage not engaging in vigorous physical activity</td>
<td>56.5 (44.4-68.7)</td>
<td>43.7 (31.3-56.2)</td>
<td>68.1 (54.6-81.6)</td>
</tr>
</tbody>
</table>
Rationale

• Lack of physical activity is one of the central risk factors especially for CVD and Diabetes; contributing to 2-3% of the global burden of disease (WHO, 2002).

• It has been shown that, at least 60% of the world population do not undertake sufficient physical activity to gain health benefits (WHO, 2002; Bull et al, 2005).

• In Tanzania, 19% of the population studied in 2007 had low levels of activity (WHO Steps data).

• No study has been done at workplace setting

• We aimed to assess the knowledge, attitude and practise as well as level of physical activity
Objectives

• To assess the level and pattern of physical activity among civil servants

• To assess knowledge, attitude and practice of physical activity among civil servants

• To assess the effectiveness of a combined education and structural intervention to promote physical activity of civil servants in this setting
Project design and methods

- **Study design:**
  Cross sectional KAP study with a multi-component intervention aimed at promoting physical activity

- **Target population:**
  - Employees in the selected ministry

- **Sample size:** 200 planned; 103 studied

- **Interventions and activities**
  - Population based intervention through promoting of physical activity among civil servants
  - Health promotion package (HPP)
    - Education component
    - Structural intervention
Data collections tools

• **Knowledge, attitude and practise**
  – Questionnaire

• **Level of Physical activity**
  – Questionnaire
  – Pedometer (step diary record)

• **Assessment of BMI and Blood Pressure**
  – Aneroid BP machine
  – Weighing scale
  – studio meter
Flow diagram of the procedure

Meeting with Top Management
(Advocacy meeting)

Selection of study participants

Baseline assessment
- Level of Physical activity (Pedometer, QPAC and Sub Saharan Questionnaire)
- KAP assessment
- Weight, height, BM, waist, hip, BP (duplicate readings)

Health Promotion Package
- Educational component to raise awareness intervention
- Structural intervention

Evaluation at 3 months and 6 months
Results (1/8)

• 103 (52%) out of 200 respondents participated in the study
• Age mean was 39 y (SD=10 y)
• Sex distribution
  – Males were 50 (48%)
  – Females were 53 (53%)
• Majority (42%) had attended a “college/university”; the least attended class was “some secondary school” (3%)
• The Ministry has no policy on physical activity but has annual sporty activities where employees are encouraged to participate
### Results (2/8)

**Table 1: Distribution of respondents according to type of occupation**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human resource officer</td>
<td>12</td>
<td>11.7</td>
</tr>
<tr>
<td>Secretary</td>
<td>12</td>
<td>11.7</td>
</tr>
<tr>
<td>Office attendants</td>
<td>12</td>
<td>11.7</td>
</tr>
<tr>
<td>Drivers</td>
<td>10</td>
<td>9.7</td>
</tr>
<tr>
<td>Accountants/Auditors</td>
<td>9</td>
<td>8.7</td>
</tr>
<tr>
<td>Information technology specialist</td>
<td>9</td>
<td>8.7</td>
</tr>
<tr>
<td>Data managers</td>
<td>7</td>
<td>6.8</td>
</tr>
<tr>
<td>Administrator</td>
<td>7</td>
<td>6.8</td>
</tr>
<tr>
<td>Head of units/Directors</td>
<td>6</td>
<td>5.8</td>
</tr>
<tr>
<td>Inspectors</td>
<td>5</td>
<td>4.9</td>
</tr>
<tr>
<td>Planning officers</td>
<td>4</td>
<td>3.9</td>
</tr>
<tr>
<td>Watchman</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Program officers</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Procurement officers</td>
<td>2</td>
<td>1.9</td>
</tr>
<tr>
<td>Communication officer</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Lawyer</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Statistician</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Storekeeper</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>103</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
Results (3/8)
Knowledge, Attitude and Practise

• More than half (68%) had an understanding that physical activity is only doing sporty related activities like jogging etc

• Although about 72 (73/103) considered themselves to be active
  – 95% (97/103) of participants` work were found not to involve vigorous activity
  – 71% (73/103) of participants` work were found not to involve moderate intensity activity

• Only 16% of participants participated in vigorous intensity sports, fitness or recreational activity and 23% of participants in moderate intensity sports
Results (4/8)
Barriers for not doing Physical activity

- Knowledge of importance of Physical activity
- Laziness
- Depends on type of work one does
- Illness/Injury
- Absence of a facility to do exercise
- Cant afford gym
- Children needs attention
- Surroundings not conducive
- Lack of motivation
- Need to rest
- Lack of company
- Time
Results (5/8)
Knowledge, Attitude and Practise

- The mean time spent for sitting or reclining per day was 3.5 hours (SD=2hours, range 10-11 hours)

- 66 (64.9%) out of 103 thought that a woman can only do the light exercise

- The weekly steps diary records found that most are relatively inactive at baseline with a mean of 6068 (SD=2751) steps per week (range, 70-11,578 steps per week).
Results (6/8)

Figure 1: Diseases knowledgeable by respondents that are contributed to lack of physical activity
Blood Pressure results
  - 28 (27%) out of 103 participants had a blood pressure of >140/90

Mean SBP and DBP
  - Mean SBP=137mmHg (SD=27)
  - Mean DBP=84mmHg (SD=17)
Results (8/8)

BMI distribution indices among participants

<table>
<thead>
<tr>
<th>BMI indices</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>normal weight (18.5-24.9 kg/m²)</td>
<td>40.0</td>
</tr>
<tr>
<td>Overweight (25-29.9 kg/m²)</td>
<td>25.0</td>
</tr>
<tr>
<td>Obese (&gt; 30 kg/m²)</td>
<td>30.0</td>
</tr>
</tbody>
</table>
Discussion

• The average steps per day obtained in this study conform with other many observational studies in done workplace before an intervention has been instituted i.e range of 6,000-12,000 steps/day [Bravata et al, JAMA, 2007]

• Similarly, the prevalence of hypertension found here is consistent with a study done in Congo among employees in Kinshasa National Company of Electricity; where they found a prevalence of 21.3% [Puepetet et al, Niger J Med, 2008]
Study limitations

- Although initial it was planned to do random sampling; convenient sampling was used and hence this could bias the results.

- Self records of steps/day from participants; this could also bias the results.

- Not reaching the required target; because the period the study was done was in last phase of a financial year where most participants were unavailable.
Conclusion

• This is only the baseline; as such we need to do an intervention and do post evaluation assessment

• Milestones
  – Develop an intervention package (Aug 2009)
  – Assessment after intervention (November 2009)
Acknowledgement

• IUHPE Faculty members
• Special thanks to Dr P Bovet
• Officials -MOHSW and Ministry of Labour, Youth and Employment
• Civil workers in the targeted Ministry