Physical activity: The South African context

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Overview

- Introduction
- Guidelines for PA
- State of PA in SA
- PA across the life-span
- Barriers to PA
- PA for a healthy nation
Introduction

• First link between protective effects of physical activity and health

• J. Morris
  – Conductor vs Bus Driver (n=31000)
  – Conductor 600 stairs/day
  – Bus Driver 90% sitting time
  – Conductor 50% less likely to have MI

Introduction

- **R Paffenbarger**
  - Longshoremen-California (n= 6451)
  - Followed 22 years/age 75/death
  - More vigorous work related activity,
  - less likely to die from CHD

Introduction

- Health benefits of PA is dose-dependent
  - Intensity
  - Frequency
  - Duration

Health benefits

Physical Activity

- Glucose
- Body fat
- Functional capacity
- Colon & Breast Cancer
- Blood pressure

Physical activity vs Physical Fitness

**Physical activity** – all bodily movement that leads to energy expenditure

**Exercise** – When physical activity is performed in a structured approach with specific aims to increase cardio-respiratory function, muscle strength, muscle endurance and flexibility

**Fitness** – The consequence of repeated exercise
Physical activity

• Time spent in moderate to vigorous activity in the following domains:
  – Work
  – Domestic
  – Transport
  – Discretionary
Guidelines for PA

• **Adults:**
  – 150 minutes or more moderate PA per week.
  – 60 minutes vigorous PA per week

• **Children:**
  – 60 minutes of moderate intensity per day
  – 10 – 15 min. bouts
Global Physical activity

Age standardised percentages of insufficient physical activity for 2008-2010

Physical activity in SA

Percentage of insufficient physical activity (< 600 MET.min/week)

Joubert et al., 2007. SAJSM. 97:725-773.
South African Demographic and Health Survey 2003. Pretoria: Department of Health
PA across the life-span

- Pregnancy: < 12 years
- Adolescents: 13 – 19 years
- Adults: 20 – 65 years
- Older adults: > 65 years

Weeks of gestation

Children
Pregnancy

- Tshwane cross-sectional - Questionnaire

![Bar chart showing activity levels during pregnancy](image-url)

- **Relatively Inactive**
  - 3rd Tri: 26%
  - 2nd Tri: 34%
- **Relatively active**
  - 3rd Tri: 58%
- **Active**
  - 3rd Tri: 16%
  - 2nd Tri: 17%
Pregnancy

- Potchefstroom Longitudinal - HAPPY-study

**Why PA?**
- Control weight gain during pregnancy
- Control weight retention post-partum
- Sub-cutaneous BF in off-spring
Children

- Primary school children
  - Objective measurement
  - 90% Gr 6 not achieving 30 min per day during school
  - Boys 38 min & Girls 33 min. (Walter. C. 2010. AJPHERD)

Rural areas

- High activity levels
  - 485 – 1017 cpm

- MVPA low
  - < 1%

Adolescents

- Physical activity and Health Longitudinal study (PAHLS)
  - Objective PA from 16 – 18 years (Accellerometry & HR)
  - 16 years = 36% reach MVPA

  - Sample of 10 100 participants
  - 13 – 19 year old participants
  - Reasons for inactivity (ill, unsafe, equipment)

Adolescents

Percentage of 13 - 19-year-olds who participated in insufficient or no physical activity in 2002 and 2008 (n=10 100 & n=10 270)
### Adolescents

<table>
<thead>
<tr>
<th></th>
<th>Percentage (%)</th>
<th>2002 Males</th>
<th>2008 Males</th>
<th>2002 Females</th>
<th>2008 Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Male</td>
<td>40</td>
<td>35</td>
<td>30</td>
<td>25</td>
</tr>
<tr>
<td>White</td>
<td>Male</td>
<td>30</td>
<td>25</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Coloured</td>
<td>Male</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Coloured</td>
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<td>8</td>
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<td>RSA</td>
<td>Female</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Percentage of 13 - 19-year-old males and females who participated in insufficient or no physical activity 2002 and 2008 (n=10 100 & 10 270)**
Adults

- **SADHS 2003**
  - 48% Males insufficient active
  - 63% Females insufficient active

- **PURE – NW 2005 – 2010**

- **WHS 2003**
  - 43% Males
  - 49% Females
Adults

Adults- Old vs Young

- Highly active (>12500 steps)
  - Young Group: 18%
  - Old Group: 0%

- Active (> 10 000 steps)
  - Young Group: 18%
  - Old Group: 8%

- Moderately active (7500 - 10000 steps)
  - Young Group: 30%
  - Old Group: 6%

- Slightly active (5000- 7500 steps)
  - Young Group: 30%
  - Old Group: 30%

- Sedentary (< 5 000 steps)
  - Young Group: 31%
  - Old Group: 56%

Older adults

NHANES 2003-2004

SADHS 2003 55 – 64 years: 67.3% women & 67% men inactive

Intellectual disabilities

80% in total inactive

- Population neglected
- Rapid ageing
- Similar risk for CHD as Non-ID persons
SANHANES-1

- SA National Health and Nutrition Examination Survey

- The knowledge, attitudes and behaviour of South Africans with respect to non-communicable and communicable infectious diseases;
- The nutritional status of South Africans as it relates to food security, dietary intake/behaviour including the consumption of alcohol, and body weight management;
- The relationship between general perceptions of health and health care services;
- The health status of children under the age of five years;
- The health status of children aged 2–9 years with respect to physical and/or mental disabilities;
- The behavioural (smoking, diet, PHYSICAL INACTIVITY) and social determinants of health and nutrition (demographic, socio-economic status and geolocation) and relate these to the health and nutritional status of the South African population.
SANHANES-1 PA Results

- Nearly a third of men and one half of women in South Africa are unfit.

33% men unfit

50% women unfit
SANHANES-1

Recommendations

- Introduction of worker-friendly policies that allow for physical and recreational activities;
- Compulsory physical education training at schools;
- Recreational parks and sports facilities part of new housing developments;
- Ensuring provision of cycling tracks in construction of new urban roads.
SANHANES-1

Recommendations lack.....

• PROMOTION OF PHYSICAL ACTIVITY
  – Active commuting options
  – Increased walkability
  – Safe areas for leisure time activities
  – Exercise intervention as prevention of NCDs
Strategies to being PA

• 2004 "Move for Health" – Vuka South Africa (DoH)
• Let's Play – M-Net
• Healthy life style campaign
• AFRican Physical Activity Network (AFPAN)

• Evaluations not performed
• SANHANES lacked measurement for Physical activity
Barriers to being PA

• Urbanisation
• Socio-economic status
• Literacy levels
• Built environment
• Infrastructure
• Perceptions and knowledge of health and PA
• Homework
• Lack of money
• Family responsibilities
• Lack of skills
<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Knowledge</td>
<td>• No PE in education</td>
</tr>
<tr>
<td>• Professionals – Biokineticists</td>
<td>• Built environment</td>
</tr>
<tr>
<td>• Sport loving nation</td>
<td>• Knowledge translation</td>
</tr>
<tr>
<td></td>
<td>• Behavioral change</td>
</tr>
<tr>
<td></td>
<td>• Watching TV</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Supportive climate</td>
<td>• Urbanisation / Crime</td>
</tr>
<tr>
<td>• Open areas for recreation</td>
<td>• Technology / Perceptions</td>
</tr>
<tr>
<td>• Current low levels of PA</td>
<td>• Chores /</td>
</tr>
<tr>
<td></td>
<td>• Burden of Disease</td>
</tr>
</tbody>
</table>
Recommendations

• PE in schools should be a priority – Action needed
Recommendation

Adapt the environment to support active transport.
Recommendation

- Biokinetics in the Public Health

89 % of population do not have access to Biokinetics

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TABLE IV. The relationship between the current number of practising biokineticists and the potential market need for the different provinces

<table>
<thead>
<tr>
<th>Province</th>
<th>Current number of practices (N)</th>
<th>Market need for biokineticists(^*) (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Cape</td>
<td>19</td>
<td>465</td>
</tr>
<tr>
<td>Free State</td>
<td>11</td>
<td>331</td>
</tr>
<tr>
<td>Gauteng</td>
<td>130</td>
<td>3,006</td>
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<tr>
<td>KwaZulu-Natal</td>
<td>33</td>
<td>1,129</td>
</tr>
<tr>
<td>Limpopo</td>
<td>5</td>
<td>472</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>9</td>
<td>422</td>
</tr>
<tr>
<td>North-West Province</td>
<td>11</td>
<td>498</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>3</td>
<td>112</td>
</tr>
<tr>
<td>Western Cape</td>
<td>63</td>
<td>1,003(^5)</td>
</tr>
<tr>
<td>Total</td>
<td>284</td>
<td>7,438(^5)</td>
</tr>
</tbody>
</table>

* Based on 100 patients/biokineticist.

\(^5\) Numbers differ due to some claims not being linked to original place of prescribing of medication.

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Fig 2. The prevalence (%) of disease in participants on the PBM database taking medication for the different chronic diseases of lifestyle. (NSAID = non-steroid anti-inflammatory drugs; CVD = cardiovascular disease.)
"Researching human movement from the cradle to the grave"

Home of the:

**HAPPY-study** *(Pregnancy)*

**North-West Child-study** *(7 – 13 years)*

**PAHL-study** *(14 – 18 years)*

THANK YOU

www.nwu.ac.za/phasrec