EUROASPIRE IV: RETURN-TO-WORK, PSYCHOSOCIAL WELL-BEING AND QUALITY OF LIFE

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Living with Coronary Heart Disease

- Coronary Heart Disease (CHD)
- Mortality risk
- Co-morbidities
- Mental burden
  - Emotional distress
- Financial loss
- Social isolation
- Health-related Quality of life (HRQoL)
- Return-to-work
WHAT IS KNOWN?

- RTW rate variation (overall): 60-90% (study populations, work definitions, follow-up duration)
- Indicator of functional rehabilitation
- The mind and RTW:

  - High health-related quality of life (HRQoL)
  - Positive illness beliefs
  - Good work expectations
  - Depression
  - Anxiety
  - Negative perceptions
  - Fear avoidance beliefs
AIMS & METHODS
What we want to know?

- European Action on Secondary Prevention through Intervention to Reduce Events (EUROASPIRE IV): 4th wave in 2012-2013 in 24 countries (78 centers)

Who returns to work?

- What factors play a role in the RTW process?

Is RTW associated with the appearance of emotional distress and health-related quality of life (HRQoL)?
DATA COLLECTION

- Data collection in standardized way by trained research staff
- Baseline information + risk factors at discharge from medical records (retrospective)
- Interview / clinical examination 6 months to 3 years after event

⇒ Personal and demographic information
   Medical history, height, weight, blood CO
   Reported lifestyle changes and disease management
   Employment status (RTW vs. No RTW)
   Hospital Anxiety and Depression Scale (HADS) outcomes
   HRQoL: HeartQoL

N= 7998
♀ ♂

Employed before event
N= 3291

Age at event
< 63 years

Total sample = 2661

Documented CHD
(CABG, PCI, AMI)
### Hospital Anxiety and Depression Scale (HADS)

**HADS:**
- $< 8 =$ normal
- $8 – 10 =$ mild symptoms
- $\geq 11-21 =$ moderate to severe symptoms
- Validated

<table>
<thead>
<tr>
<th>Item</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel tense or ‘wound up’</td>
<td>□ Most of the time □ A lot of the time □ Time to time, occasionally □ Not at all</td>
</tr>
<tr>
<td>I feel as if I am slowed down</td>
<td>□ Nearly all of the time □ Very often □ Sometimes □ Not at all</td>
</tr>
<tr>
<td>I still enjoy the things I used to enjoy</td>
<td>□ Definitely as much □ Not quite so much □ Only a little □ Not at all</td>
</tr>
<tr>
<td>I get a sort of frightened feeling like ‘butterflies in the stomach’</td>
<td>□ Not at all □ Occasionally □ Quite often □ Very often</td>
</tr>
<tr>
<td>I get a sort of frightened feeling like something awful is about to happen</td>
<td>□ Very definitely and quite badly □ Yes, but not too badly □ A little, but it doesn’t worry me □ Not at all</td>
</tr>
<tr>
<td>I have lost interest in my appearance</td>
<td>□ Definitely □ I don’t take as much care as I should □ I may not take quite as much care □ I take just as much care as ever</td>
</tr>
<tr>
<td>I can laugh and see the funny side of things</td>
<td>□ As much as I always could □ Not quite so much now □ Definitely not so much now □ Not at all</td>
</tr>
<tr>
<td>I feel restless as if I have to be on the move</td>
<td>□ Very much indeed □ Quite a lot □ Not very much □ Not at all</td>
</tr>
<tr>
<td>Worrying thoughts go through my mind</td>
<td>□ A great deal of the time □ A lot of the time □ From time to time but not too often □ Only occasionally</td>
</tr>
<tr>
<td>I look forward to things with enjoyment</td>
<td>□ As much as I ever did □ Rather less than I used to □ Definitely less than I used to □ Hardly at all</td>
</tr>
<tr>
<td>I feel cheerful</td>
<td>□ Not at all □ Not often □ Sometimes □ Most of the time</td>
</tr>
<tr>
<td>I got sudden feelings of panic</td>
<td>□ Very often indeed □ Quite often □ Not very often □ Not at all</td>
</tr>
<tr>
<td>I can sit at ease and feel relaxed</td>
<td>□ Definitely □ Usually □ Not often □ Not at all</td>
</tr>
<tr>
<td>I enjoy a good book or radio or TV programme</td>
<td>□ Often □ Sometimes □ Not often □ Very seldom</td>
</tr>
</tbody>
</table>
HeartQoL: A Disease Specific Tool for HRQoL

HeartQoL < 3 domains: global, physical, emotional

- consists of 14 items
  - 10 items focus on physical well-being
  - 4 items on emotional well-being
- ranging: 0 (worst HRQoL) 3 (best HRQoL)
- Validated

Thank you for addressing these questions that will give us an understanding of how your heart problem has affected you.

We would like to know how your heart problem has bothered you and how you have been feeling during the last 4 weeks.

Please circle one number

<table>
<thead>
<tr>
<th>First, in the last 4 weeks, have you been bothered by having to:</th>
<th>No</th>
<th>A little</th>
<th>Some</th>
<th>A lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walk indoors on level ground?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>2. Garden, vacuum, or carry groceries?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3. Climb a hill or a flight of stairs without stopping?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4. Walk more than 100 yards at a brisk pace?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5. Lift or move heavy objects?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Now, in the last 4 weeks, have you been bothered by:</th>
<th>No</th>
<th>A little</th>
<th>Some</th>
<th>A lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Feeling short of breath?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7. Being physically restricted?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>8. Feeling tired, fatigued, low on energy?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>9. Not feeling relaxed and free of tension?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>10. Feeling depressed?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>11. Being frustrated?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>12. Being worried?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>13. Being limited in doing sports or exercise?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>14. Working around the house or yard?</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
RESULTS
RETURN-TO-WORK?

Mean age 53.0 yrs (SD 6.64)
14.4% (n=291)  85.6% (n=1723)

p = 0.12

p < 0.001

RTW
(n=2014)

No RTW
(n=637)

p < 0.001

< 50 yrs  ≥ 50 - <58 yrs  ≥58 - <63 yrs

low education  medium education  high education
RTW only for the young, educated, no prior CVD?!

Adjusted for:
- Sociodemographics
- Recruiting event
- Recurrent CAD
- Self-reported BP/cholesterol/DM
- Cardiac rehabilitation
- Lifestyle
  (BMI, smoking, physical activity)

*: p < 0.05
**: p < 0.001
Difficult hypertension management in older patients?!

Younger ≠ most invasive treatment

Another reason to stop smoking!

Age-stratified adjusted odds ratios (95%CI) for RTW
RTW TO PREVENT FEELING BLUE?!?

Crude and Adjusted odds ratios (95%CI) for HADS-D≥8

Model 1: crude
Model 2 : adjusted for
• age
• sex
• educational level
• recruiting event (CABG, PCI, AMI)

Model 3: adjusted for
▪ sociodemographics
▪ recruiting event
▪ recurrent CAD
▪ self-reported BP/cholesterol/DM
▪ cardiac rehabilitation
▪ lifestyle
  (BMI, smoking, physical activity)

All models: p < 0.001
RTW = AN ALLY AGAINST ANXIETY?! 

Crude and Adjusted odds ratios (95%CI) for HADS-A≥8

Model 1: crude

Model 2: adjusted for
- age
- sex
- educational level
- recruiting event (CABG, PCI, AMI)

Model 3: adjusted for
- sociodemographics
- recruiting event
- recurrent CAD
- self-reported BP/cholesterol/DM
- cardiac rehabilitation
- lifestyle
  (BMI, smoking, physical activity)

All models: p < 0.001
RTW above all important in younger patients to counter anxiety!

Age-stratified adjusted odds ratios (95%CI) for HADS-A≥8

- Odds <50 years
- Odds 50-≤58 years
- Odds 58-≤63 years *

p <0.001
*: p=0.08
The retired life is not always the better life!

Model 1: crude
Model 2: adjusted for
- age
- sex
- educational level
- recruiting event (CABG, PCI, AMI)

Model 3: also adjusted for
- recurrent CAD
- self-reported BP/cholesterol/DM
- cardiac rehabilitation
- lifestyle
  (BMI, smoking, physical activity)

Crude and Adjusted means (SE) for HeartQoL\textsubscript{physical}

Crude and Adjusted means (SE) for HeartQoL\textsubscript{emotional}

RTW model 1
No RTW model 1
RTW model 2
No RTW model 2
RTW model 3
No RTW model 3

Means
1.5  1.7  1.9  2.1  2.3  2.5  2.7

RTW
No RTW

all models : p < 0.001
DISCUSSION & CONCLUSION
**Findings RTW**

- Majority of CHD patients (76%) resume work ≈ most studies\(^{[16-23]}\) of last 15 years (RTW: 70-80%) ≠ some studies\(^{[1,2,3,4,5,6]}\) higher rate (! heterogeneity)

- RTW related to younger age high education no prior CVD ≈ previous research\(^{[3,4,7-11]}\)

- Could ‘Health Literacy’ be a mediator between vulnerable groups and RTW ?!

- \(\text{RTW}_{\text{adjusted}}\) not related to:
  - gender (!) ≈ Virgo study \(^{[4]}\) but ≠ general review\(^{[14]}\) of RTW with ↓ rates in ♀
  - CR ≠ literature\(^{[1,4,15]}\)
  - self-employment ≈ conflicting studies\(^{[3,5]}\)

- Differences in age groups: RTW ↓
  - < 50 years: CABG, smoking
  - ≥ 63 years: hypertension!

  *Management of multi-morbidities and combination with work place is often challenging*
Work resumption leads to better odds for depression or anxiety
≈ previous research[24-27]

General HRQoL improves with RTW ≈ Warraich et al., 2018

Especially emotional QoL (in younger patients) benefits from RTW

common mental disorders are a prominent reason of absenteeism[28]
in Belgian population < 40 years old

mental health barriers for the unemployed & the labour market[29]
### STRENGTHS
- Major source of data
- Multicenter & international
- Realistic age restriction
- Selection of employed CHD patient pre-event
- Wide index event
- Different tools for mental well-being
- First study to use HeartQoL for RTW

### LIMITATIONS
- Cross-sectional design
- Not a RTW study
  - no occupational characteristics
- RTW attempts or time to RTW unknown
- Single measurement of HADS/HeartQoL
- First study to use HeartQoL for RTW
WHAT’S NEXT?!

- Tailored (age) disease management of CHD to optimize RTW
- Lifestyle should be the target for health professionals & society (! workplace !)
- Personal/occupational traits more important than employment type
- Occupational focus in cardiac rehabilitation
- Patient empowerment through ‘Health Literacy’ to aide RTW?!
- RTW protective against emotional distress
- Reciprocal relationship between RTW – QoL

research

more HeartQoL applications in RTW research
(Return-to-)Work is good for your health and well-being!

Thank you! Questions?

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REFERENCES

- Vector images obtained from https://thenounproject.com/


