Anxiety and depression predict 1-year mortality in cardiac patients: results from the national DenHeart survey

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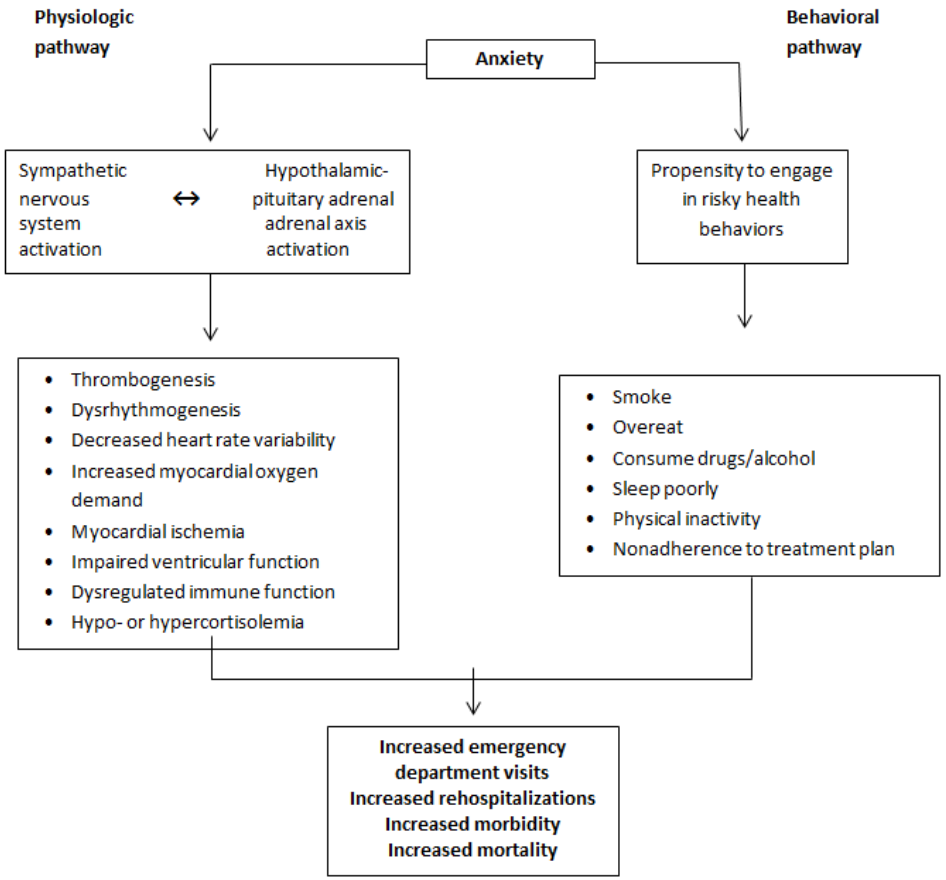
Background

- Up to 70 % of cardiac patients experience anxiety
- Anxiety and depression predicts mortality in patients with MI and heart faillure



Moser & Riegel. Cardiac Nursing – A Companion to Braunwald's Heart Disease, 2008. Chapter 41.

Objective and methods

The hypothesis behind the study was that cardiac patients with anxiety or depression have a higher mortality risk.

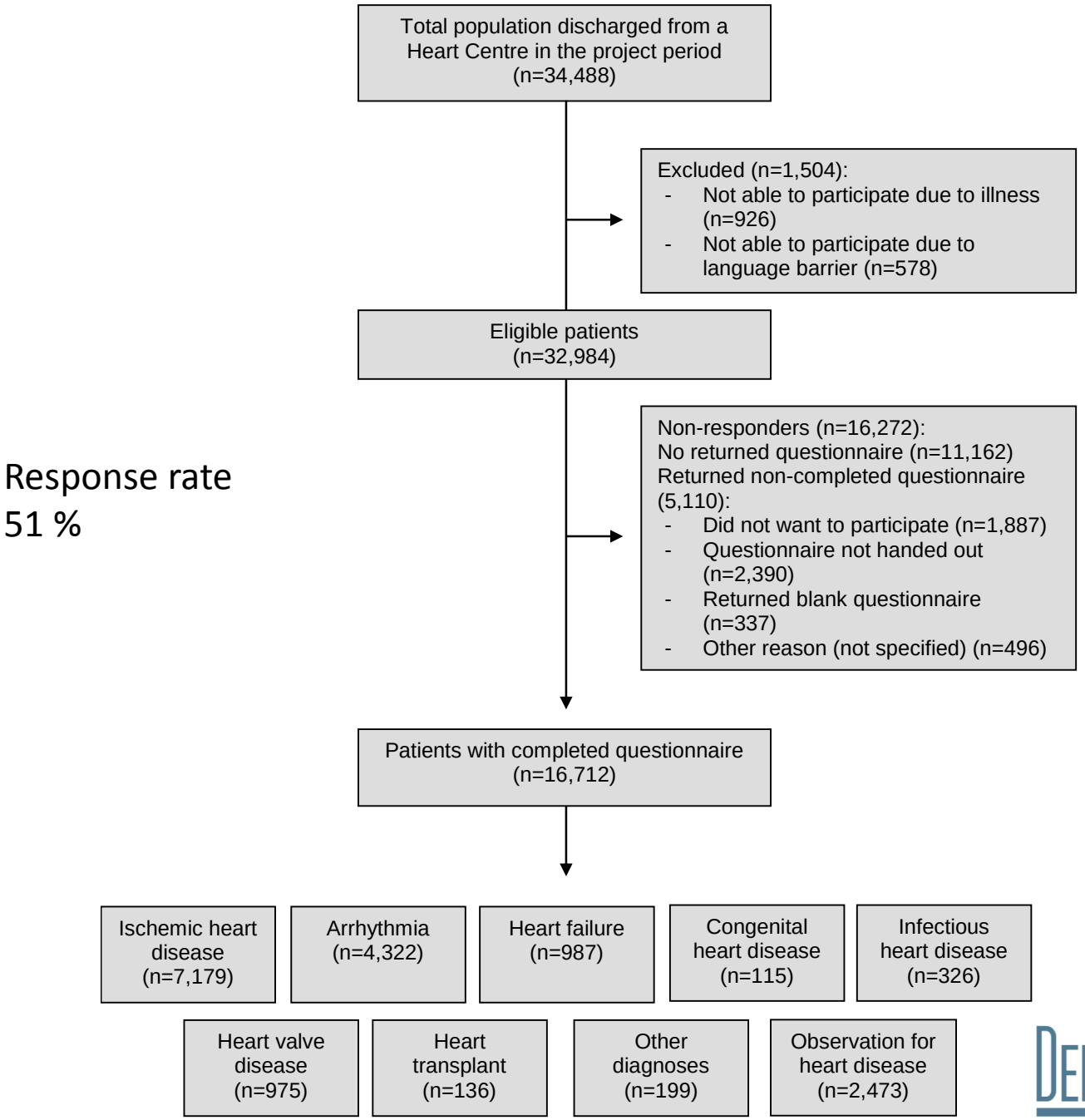
- The objective was to explore if anxiety and depression is a predictor of 1-year mortality *across all cardiac diagnoses*.

Design: Cross-sectional survey with register follow-up.

Setting: Five national heart centres.

Participants: All cardiac patients discharged from a national heart centre during one year (April 2013-April 2014).

Data: Hospital Anxiety and Depression Scale (HADS) were included and data was combined with national registers to obtain information about 1-year mortality.



Response rate
51 %

Selected demographic data

	All	Ischemic heart disease	Arrhythmia	Heart failure	Congenital heart disease	Infectious heart disease	Heart valve disease	Heart transplant	Other diagnoses	Observation for heart disease
n	16,689	7,170	4,316	987	115	203	974	136	319	2,469
Male, %	67	73	65	73	47	75	66	74	61	53
Age, mean	64.3	65.5	63.6	65.4	43.9	59.4	71.2	51.2	61.4	61.5
Married, %	64	65	65	60	44	66	60	57	62	63

Proportions of patients with anxiety and depression across cardiac diagnoses

	Responders	Ischemic heart disease	Arrhythmia	Heart failure	Congenital heart disease	Infectious heart disease	Heart valve disease	Heart transplant	Other diagnoses	Observation for heart disease	p
n	16,712	7,179	4,322	987	115	204	975	136	321	2,473	
HADS											
HADS-A, mean (SE)	5.85 (0.03)	5.95 (0.05)	5.52 (0.06)	5.94 (0.14)	5.49 (0.40)	5.35 (0.30)	6.01 (0.14)	3.39 (0.37)	5.91 (0.24)	6.21 (0.09)	<0.001
HADS-A ≥ 8, %	32.12	32.98	29.69	32.68	27.88	27.68	32.24	11.68	32.54	34.86	<0.001
HADS-D, mean (SE)	4.28 (0.03)	4.34 (0.04)	3.92 (0.06)	5.14 (0.12)	4.03 (0.35)	4.41 (0.26)	4.67 (0.12)	3.07 (0.33)	4.72 (0.21)	4.21 (0.08)	<0.001
HADS-D ≥ 8, %	19.15	19.71	16.66	24.70	16.91	17.69	20.68	11.18	22.23	19.43	<0.001

HADS-A = Hospital Anxiety and Depression Scale - Anxiety; HADS-D = Hospital Anxiety and Depression Scale - Depression; SE = standard error.

- Differences in means between all diagnostic groups were tested using the F-test. Differences in proportions between all diagnostic groups were tested by the Pearson $\chi 2$-test.
- Analyses were adjusted for sex, marital status, educational level, TU co-morbidity score, smoking, BMI and alcohol intake

Best **Middle** **Worst**

- Scores above 8 suggest anxiety/depression
- 1.5-2 points difference is considered clinically relevant

Anxiety and depression as predictors of mortality across cardiac diagnoses

	All patients	Ischemic heart disease	Arrhythmia	Heart failure	Heart valve disease	Combined group[a]	Observation for heart disease
	HR (CI)[b]	HR (CI)[b]	HR (CI)[b]	HR (CI)[b]	HR (CI)[b]	HR (CI)[b]	HR (CI)[b]
HADS-A≥8 vs. HADS-A<8	1.92 (1.52-2.42)*	1.76 (1.17-2.65)*	2.80 (1.69-4.64)*	2.10 (1.14-3.87)*	1.28 (0.56-2.91)	2.96 (1.03-8.51)*	3.15 (1.31-7.61)*
HADS-D≥8 vs. HADS-D<8	2.29 (1.81-2.90)*	3.28 (2.16-4.98)*	3.08 (1.83-5.18)*	1.69 (0.88-3.25)	0.88 (0.36-2.14)	3.58 (1.14-11.22)*	1.85 (0.74-4.62)

HADS-A = Hospital Anxiety and Depression Scale – Anxiety, HADS-D = Hospital Anxiety and Depression Scale – Depression,

[a] This group consists of patients with congenital heart disease, infectious heart disease, heart transplant and other small diagnostic groups.

[b] Cox regression adjusted for age, sex, marital status, educational level, TU co-morbidity score, smoking, BMI and alcohol intake.

* Significance level set at 0.05.

There were 471 deaths among the 16,689 responders during the first year after discharge.

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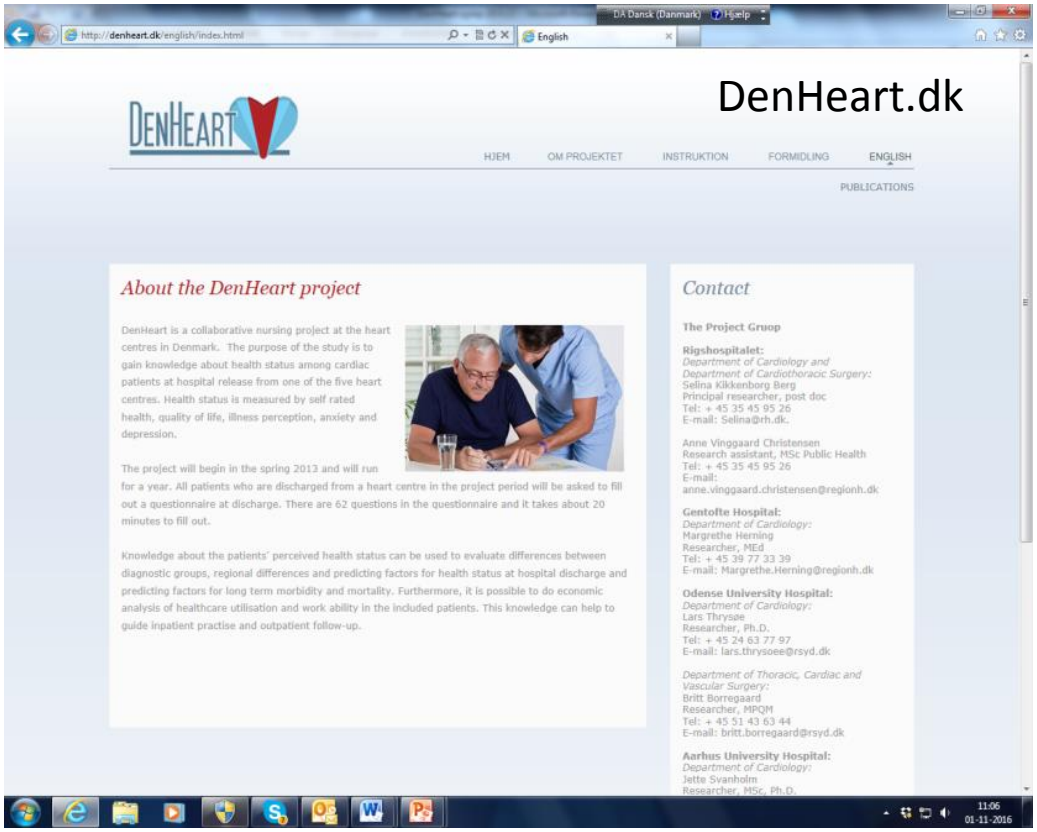
Limitations

- The proportions of patients in each diagnostic group are similar among responders and the total population which indicates that no serious systematic errors in response occurred.
- Self-reported outcomes are by nature not objective and therefore, sources of bias may exist.
- Registers may be biased due to the possible inaccuracy of data.
- The patients treated at the heart centres are often aged and severely ill, which may be reflected in the response rate of 51%.
- Even though the responders and the non-responders were similar in the demographics, much higher mortality rates were found among non-responders. It is natural that the most severely ill would be overrepresented among non-responders
- This national study was carried out in Denmark and international differences may exist in treatment as well as culture and social behaviour. However, international guidelines for treatment are followed in Denmark and there is no reason to believe that the differences between diagnostic groups should differ much between countries.

Conclusion

Cardiac patients, across diagnoses, with anxiety or depression had a higher mortality risk than patients without these symptoms. Interventions with the aim of reducing anxiety and depression should be implemented.

Q&A



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