

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

Selina Kikkenborg Berg
Ph.D., FESC, FAHA



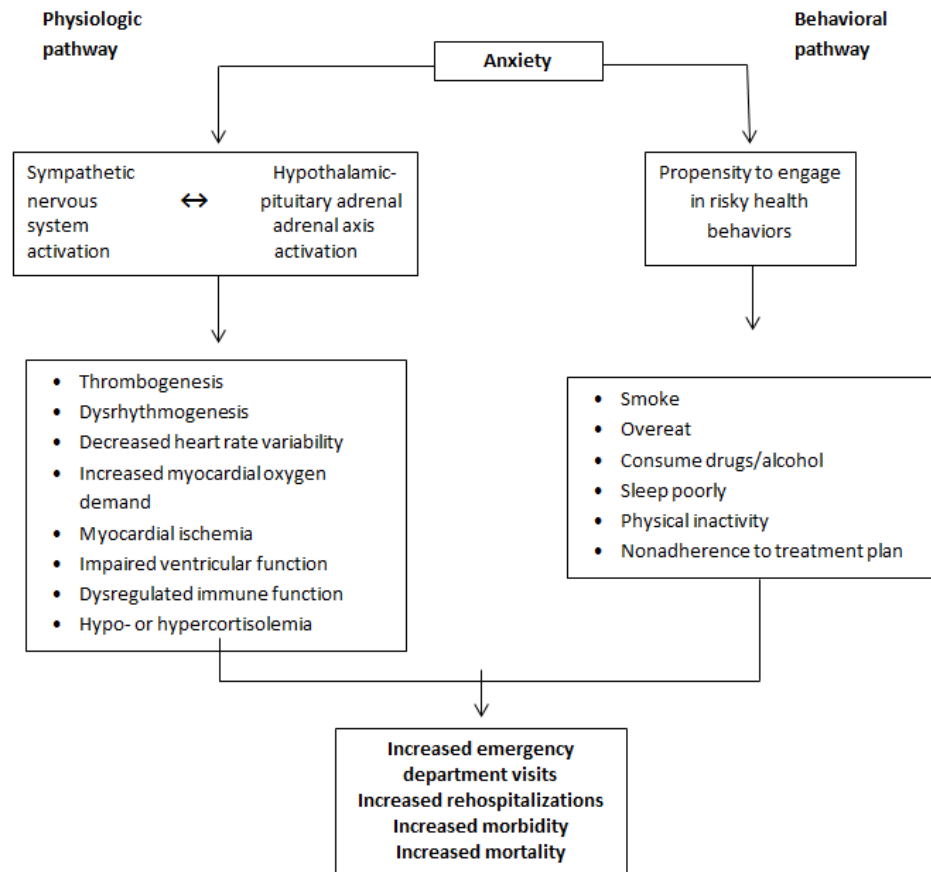
No disclosures

The study was funded by Rigshospitalet, Herlev-Gentofte Hospital, Odense University Hospital, Aarhus University Hospital, Aalborg University Hospital and the Novo Nordisk Foundation. The research presented was investigator initiated.



Background

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



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.

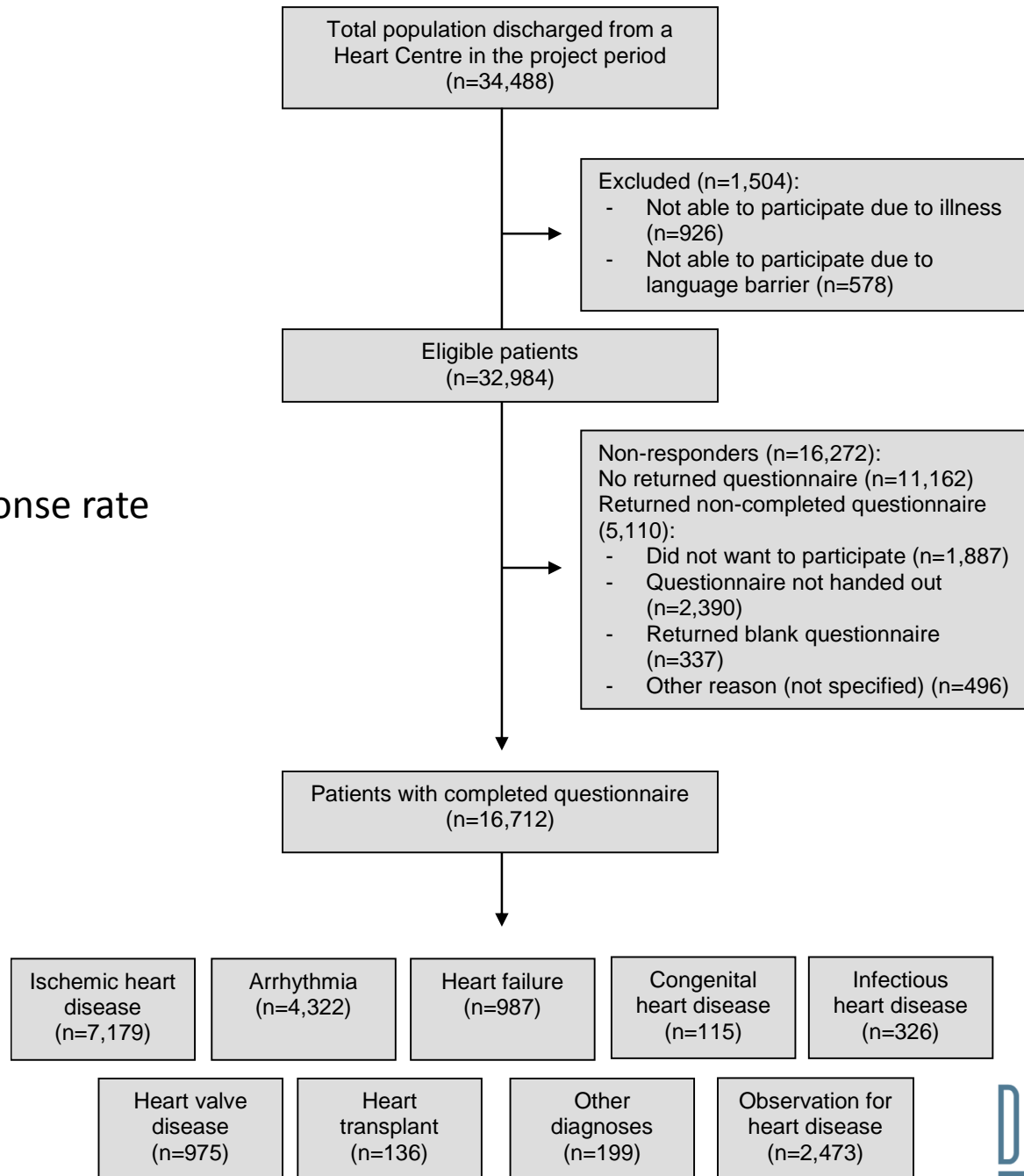
Setting: Five national heart centres.

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 χ^2 -test.
- Analyses were adjusted for sex, marital status, educational level, TU co-morbidity score, smoking, BMI and alcohol intake



- 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.	1.92	1.76	2.80	2.10	1.28	2.96	3.15
HADS-A<8	(1.52-2.42)*	(1.17-2.65)*	(1.69-4.64)*	(1.14-3.87)*	(0.56-2.91)	(1.03-8.51)*	(1.31-7.61)*
HADS-D≥8 vs.	2.29	3.28	3.08	1.69	0.88	3.58	1.85
HADS-D<8	(1.81-2.90)*	(2.16-4.98)*	(1.83-5.18)*	(0.88-3.25)	(0.36-2.14)	(1.14-11.22)*	(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.



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



The screenshot shows a web browser window displaying the DenHeart.dk website. The browser's address bar shows the URL <http://denheart.dk/english/index.html>. The website features a navigation menu with links for 'HJEM', 'OM PROJEKTET', 'INSTRUKTION', 'FORMIDLING', 'ENGLISH', and 'PUBLICATIONS'. The main content area is divided into two columns. The left column is titled 'About the DenHeart project' and contains text describing the project's purpose and timeline, along with an image of a patient and a healthcare professional. The right column is titled 'Contact' and lists contact information for three hospitals: Rigshospitalet, Gentofte Hospital, and Odense University Hospital, including names, titles, and contact details for various researchers.

DenHeart.dk

HJEM OM PROJEKTET INSTRUKTION FORMIDLING ENGLISH PUBLICATIONS

About the DenHeart project

DenHeart is a collaborative nursing project at the heart centres in Denmark. The purpose of the study is to gain knowledge about health status among cardiac patients at hospital release from one of the five heart centres. Health status is measured by self rated health, quality of life, illness perception, anxiety and depression.

The project will begin in the spring 2013 and will run for a year. All patients who are discharged from a heart centre in the project period will be asked to fill out a questionnaire at discharge. There are 62 questions in the questionnaire and it takes about 20 minutes to fill out.

Knowledge about the patients' perceived health status can be used to evaluate differences between diagnostic groups, regional differences and predicting factors for health status at hospital discharge and predicting factors for long term morbidity and mortality. Furthermore, it is possible to do economic analysis of healthcare utilisation and work ability in the included patients. This knowledge can help to guide inpatient practise and outpatient follow-up.



Contact

The Project Group

Rigshospitalet:
Department of Cardiology and
Department of Cardiothoracic Surgery:
Selina Klittenberg Berg
Principal researcher, post doc
Tel: + 45 35 45 95 26
E-mail: Selina@rh.dk.

Anne Vinggaard Christensen
Research assistant, MSc Public Health
Tel: + 45 35 45 95 26
E-mail: anne.vinggaard.christensen@regionh.dk

Gentofte Hospital:
Department of Cardiology:
Margrethe Herring
Researcher, MEd
Tel: + 45 39 77 33 39
E-mail: Margrethe.Herring@regionh.dk

Odense University Hospital:
Department of Cardiology:
Lars Thrysoe
Researcher, Ph.D.
Tel: + 45 29 63 77 97
E-mail: lars.thrysoe@rsyd.dk

Department of Thoracic, Cardiac and
Vascular Surgery:
Britt Borregaard
Researcher, MPQH
Tel: + 45 51 43 63 44
E-mail: britt.borregaard@rsyd.dk

Aarhus University Hospital:
Department of Cardiology:
Jette Svanholm
Researcher, MSc, Ph.D.

Co-authors:

Charlotte Bruun Thorup, Britt Borregaard,
Anne Vinggaard Christensen, Lars Thrysoe,
Trine Bernholdt Rasmussen, Ola Ekholm, Knud
Juel, Marianne Vamosi

