Socioeconomic status and the course of quality of life in coronary heart disease and cancer
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Summary of the thesis in English
Both cancer and coronary heart disease (CHD) are prevalent chronic conditions which represent a major concern both for the patients’ life and for public health. In parallel with the development of new diagnostic methods and clinical treatments, research has recently begun to recognize the link between psychosocial factors and the development of these diseases. In particular, social epidemiology has produced a consistent set of findings suggesting that socioeconomic status (SES) is related to disparities in Quality of Life (QoL) during the course of chronic conditions such as cancer and CHD. However, to date there were no empirical studies which systematically explore this topic.

**Introduction**

*Chapter 1* starts with an overview of the research on cancer and CHD, addressing the impact of these conditions on QoL. Next, it describes the relationship between SES and QoL on a general level, as well as more specifically in cancer and CHD patients. Finally, it illustrates the psychological factors, such as perceived control, which might partially mediate this relationship. Furthermore, this chapter offers a description of the background and aims of the different studies which form the core part of this thesis.

**Part 1: Socioeconomic status and the course of quality of life in cancer and coronary heart disease**

The first part of this thesis (*Chapters 2, 3 and 4*) provides insights into the impact of SES on cancer and CHD by exploring cross-sectional and longitudinal differences in patients’ QoL and by suggesting possible mechanisms which might regulate such disparities.

*Chapter 2* examines the adaptation process of cancer patients in relation to their SES (measured in terms of educational level). A pre-morbid measurement of QoL was used as a reference point to assess the patients’ adaptation to cancer during the 12 months after diagnosis. In this study, adaptation was defined as the patients’
ability to return to their pre-morbid level of QoL. Unexpectedly, there were no significant educational differences in the adaptation process in any area of QoL. However, it was possible to observe different trends of adaptation in role and physical functioning. In both cases, high-educated patients were more likely to adapt completely to the disease compared to those who had a lower education. The unique prospective design of the study and the operationalization of the adaptation process provided a detailed description of the extent and speed of recovery in cancer patients, something that has not been properly addressed in previous research. In addition cross-sectional disparities between educational groups were mainly present in physical functioning: high-educated patients report higher levels of physical functioning at 6 and 12 months after diagnosis with cancer. In general it is noteworthy that most patients completely adapted to the disease in all domains of QoL, independently of their socioeconomic background.

Chapter 3 investigates cross-sectionally and prospectively the course of QoL in CHD patients with different SES. Patients with high SES reported more favourable outcomes in most domains of QoL. Most disparities in SES were present in the medium and long term (6 and 12 months after the diagnosis) in physical functioning and in the long term in social and role functioning. Importantly, socioeconomic differences in physical functioning also existed pre-morbidly. These findings reveal that post-morbid differences in QoL are regulated by two different mechanisms. Socioeconomic disparities in physical functioning are not a direct consequence of CHD, but rather a pattern established before the onset of the illness. In social and role functioning, however, such socioeconomic differences seem to represent a differential response to the disease. Cross-sectional differences in functional domains were confirmed by longitudinal analysis, which revealed differing pathways in the course of social, role and physical functioning between CHD patients with high and low SES.

Chapter 4 explores in detail the cross-sectional and longitudinal differences in QoL in relation to SES (measured in terms of educational level) in a large sample of
heart failure (HF) patients. The patients were followed from hospitalization to 18 months after discharge and changes in QoL within this interval were tested among groups with different educational levels. Cross-sectional results showed more favourable outcomes for high-educated patients in physical and functional domains (energy, physical functioning, social functioning and limitations in role functioning due to emotional problems). In most of the analyses, significant differences were found when the high-educated patients were compared to the low- and the very low-educated ones. Longitudinal disparities were only present in relation to limitations in role functioning due to emotional problems, where high-educated patients significantly improved compared to patients with lower education. The numerous cross-sectional and longitudinal inequalities between educational groups in this aspect of QoL were not supported by corresponding differences in relation to emotional well-being.

This study confirms that the impact of HF differently affects the physical and functional domains of QoL in patients with different educational backgrounds. Furthermore, it shows that HF patients with a low education are more likely to report greater functional limitations in response to psychological stress compared to higher-educated patients.

**Summary of part 2: Explanatory factors**

The second part of the thesis (Chapter 5) offers a potential explanation for the relationship between SES and disparities in QoL in CHD by addressing the mediating role of specific psychological characteristics such as perceived control. The study investigates the mediating effect of different facets of perceived control, such as mastery and self-efficacy, on the relation between SES and changes in functional status between the pre-morbid assessment and 12 months after diagnosis. The analysis showed that SES accounted for differences in physical functioning, but not in social and role functioning. Furthermore results showed that self-efficacy mediated the previous relation, while mastery did not.
Mastery pertains to a general feeling of being in control of personal forces that influence the direction of one’s life, while self-efficacy concerns the confidence people have in using specific skills in order to produce determined outcomes. In line with this definition, self-efficacy becomes particularly important in the regulation of health behaviours, such as adherence to treatments, dieting and rehabilitative exercise, which are necessary to maintain a good level of physical functioning after CHD. According to the results of this study, CHD patients with high SES might be more confident of being able to accomplish specific tasks (i.e. have more self-efficacy) which ameliorate their physical condition in the long run.

**Conclusions**

*Chapter 6* presents a summary and discussion of the main results and implications of these findings. The issues addressed in this chapter include:

1. Disease-specific and generic characteristics of the cancer and CHD cohorts in relation to SES and course of QoL.
2. The contribution of age, gender, comorbidity, severity of the disease and self-efficacy, in determining the QoL of cancer and CHD patients in concomitance with SES.
3. The specific characteristics of the samples included in the four studies such as the age range of the participants and the sample attrition.
4. Limitations and advantages of the present studies, such as the use of fixed assessment points after the diagnosis or the possibility to measure real adaptation and causality by referring to the pre-morbid situation of the patients.

Last part of the conclusions lists recommendations for future research which relate to this work.

In short this research points to the conclusion that the influence of SES on the course of QoL is disease-specific and, in the long term, is relevant to CHD but not to cancer. Regarding CHD, most socioeconomic inequalities in the course of the
disease are related to functional status, particularly physical functioning. Furthermore, thanks to the prospective design of the study it is possible to attribute disparities in physical functioning after diagnosis to pre-morbid conditions, rather than to the onset of the disease. Regarding the role of psychological factors in the relation between SES and the course of QoL, two main findings emerged. 1) Heart failure patients with different SES respond differently to the same level of psychological distress: high SES patients experience less impairment in role functioning, possibly due to an uneven distribution of resources between socioeconomic groups. 2) Self-efficacy is the only aspect of perceived control which mediates the relationship between SES and changes in physical functioning in CHD patients.