

A tool of the future for strengthening compassion in a Danish hospital setting.

Protocol version 3 May 12th, 2026

Trial phase 1.b

Principal Investigator's (PI's)

PI: Camilla Birgitte Sørensen, MD.

- Pediatric and adolescent department, Herlev & Gentofte Hospital
- Medical doctor, Ph.D. student, Herlev & Gentofte Hospital

Email: Camilla.birgitte.sorensen@regionh.dk

PI: Nanja Holland Hansen, Ph.D., licensed psychologist,

- Postdoctoral researcher, Steno Diabetes Center Copenhagen (SDCC)
- Postdoctoral researcher and psychologist, Herlev & Gentofte Hospital

Email: Nanja.holland.hansen@regionh.dk

Trial sites:

Herlev & Gentofte Hospital, Herlev Hospital Borgmester Ib Juuls Vej 1, 2730 Herlev and Gentofte Hospitalsvej 1, 2900 Hellerup

A tool of the future for strengthening compassion in a Danish hospital setting.

To promote and strengthen compassion at Herlev and Gentofte Hospital using a systematic and research-based approach. The goal is to implement a new evidence-based tool that can systematically measure and improve compassion in a hospital context, focusing on both patients and staff. This initiative aims to enhance patient experiences, increase feelings of safety and well-being, and improve the psychosocial work environment.

The Study Group

Investigators:

PI: Camilla Birgitte Sørensen, MD.

- Pediatric and adolescent department, Herlev & Gentofte Hospital
- Medical doctor, Ph.D. student, Herlev & Gentofte Hospital

PI: Nanja Holland Hansen, Ph.D., licensed psychologist,

- Postdoctoral researcher, Steno Diabetes Center Copenhagen (SDCC)
- Postdoctoral researcher and psychologist, Herlev & Gentofte Hospital

Research Collaborator: Shane Sinclair, Ph.D.

- Professor, Faculty of Nursing, University of Calgary
- Director, Compassion Research Lab
- Adjunct Professor, Cumming School of Medicine University of Calgary

Research Collaborator: Karl Bang Christensen, Ph.D.

- Professor, University of Copenhagen, Department of Public Health, Section of Biostatistics

Trial sites: Herlev & Gentofte Hospital, Herlev Hospital Borgmester Ib Juuls Vej 1, 2730 Herlev and Gentofte Hospitalsvej 1, 2900 Hellerup

Contents page

1. Aim	4
1.A. Problem definition, hypothesis, endpoint, and rationale.....	4
2. Background and literature	6
• Compassion's impact on patients.....	6
• Compassion's impact on staff.....	6
• Compassion's impact on the organization and socioeconomic factors.....	7
• Compassion's economic impact.....	8
• Creating a common language and eventually a shared value system.....	8
• Research questions.....	8
3. Method	8
3.A. Design.....	8
3.B. Phase 1a: Translation of the three versions of the SCQ.....	9
• Practical framework.....	10
• Recruitment.....	10
• Data management and storage.....	11
• Data analysis.....	11
3.C. Phase 1b: Validation of the three versions of the SCQ.....	11
• Practical framework.....	11
• Recruitment.....	11
• Demographic information of the patients.....	12
• Statistical analysis.....	13
3.D. Phase 2: Measuring patients and health professionals' experience of compassion.....	13
• Practical framework.....	13
• Recruitment.....	13
• Data collection procedure: Patients.....	14
• Demographic information: Patients.....	14
• Data collection procedure: Healthcare professionals.....	15
• Demographic information: Healthcare professionals.....	15
• Data management and storage for both patients and healthcare professionals.....	16
• Statistical analysis.....	16
3.E. Phase 3: Implementation of existing compassion-enhancing interventions and/or development of new initiatives based on findings from part 2.....	17
4. Risk, adverse effects, and disadvantages	17
5. Data management and storage of data	18
6. Budget	18

7. Recruitment of participants.....	20
8. Informed consent: Patients.....	21
9. Informed consent: Healthcare professionals.....	23
10. Questionnaires.....	26
11. Publication.....	26
12. Ethical considerations.....	26
13. References.....	27

1. Aim

The aim of the project is to promote and strengthen compassion at Herlev and Gentofte Hospital using a systematic and research-based approach. By implementing a new evidence-based tool that can systematically measure and improve compassion in a hospital context, focusing both on patients and healthcare professionals. This will enhance patient experiences, increase feelings of safety and well-being, and improve the psychosocial work environment.

1.A. Problem definition, hypothesis, endpoints, and rationale

The lack of workforce and increasing demands in healthcare make compassion crucial for both well-being and patient safety. Compassion is the willingness to recognize when oneself or others are struggling, experiencing difficulty or distress, and simultaneously having the motivation to act to alleviate that difficulty or discomfort (1–9).

Several definitions exist, but what they all share is the active component: the motivation to relieve suffering, which distinguishes compassion from the more passive concept of empathy. At its core, compassion is about taking responsibility for the well-being of oneself and others (both individually and organizationally), encouraging an open, curious, and helpful approach to difficulties rather than turning away when things get hard.

Compassion supports a regenerative healthcare system where compassion and care are integrated into every aspect of treatment for both patients and healthcare professionals. A recent study found that compassion accounts for nearly 20% of the variation in overall patient ratings of care quality (64). This suggests that promoting user involvement and integrating compassion into patient satisfaction surveys is worth considering. Furthermore, the study also showed that the Sinclair Compassion Scale – Emergency Departments (SCQ-ED) helped identify which population groups felt they received less compassionate care. This enables organizations to identify patient groups who do not feel well treated in the healthcare system, which can support efforts to reduce health inequities (10).

Despite numerous studies supporting the importance of compassion in healthcare (11,12), there are clear signs that the healthcare system is suffering from empathy fatigue and a general lack of compassion (i.e., compassion distress) (13). Research shows that greater compassion among healthcare staff correlates with higher psychological well-being. Thus, fostering compassion can benefit both patient care and staff well-being (14).

In Denmark and abroad, attention has increasingly focused on the human cost of current healthcare systems. In the aftermath of the COVID-19 pandemic, particular attention has been given to physical and mental strain on healthcare workers, absenteeism, staff turnover, and associated risks to patient safety (15–17). In 2022, the Danish Council of Ethics released a report titled *Care in the Healthcare System*, which noted that care and presence have been deprioritized in favor of productivity (18). Future focus should shift toward building sustainable healthcare systems.

The hypothesis of this project is as follows:

1. The Sinclair Compassion Questionnaire (SCQ) can be used as an evidence-based tool in a Danish healthcare setting.
2. The SCQ can be used as an evidence-based tool to map out and show how patients experience care, and which groups receive the poorest quality.
3. The Health Care Professional Ability Self-Assessment SCQ-HCPASA (compassion ability) will map out and show how healthcare professionals perceive their ability to provide good patient care.
4. The Health Care Professional Ability Self-Assessment SCQ-HCPCSA (compassion competence) is correlated with healthcare professionals' level of work burnout (measured using the Copenhagen Burnout Inventory work-related burnout subscale (CBI) and sick leave.
5. Data obtained from the SCQ, SCQ-HCPCSA, and SCQ-HCPASA will identify specific areas of low compassion competence and ability, thereby providing actionable information to guide the development or implementation of targeted compassion interventions.
6. There is a correlation between healthcare professionals' compassion ability and competence and burnout, sick leave, and turnover rate.

The endpoints of this study:

Overall

- The validation of the SCQ

Patients

- Their experience of receiving compassionate care (SCQ).

Healthcare professionals

- Their ability to give compassionate care (SCQ-HCPASA (compassion ability)).
- Their competence in providing compassionate care (SCQ-HCPCSA) (compassion competence)).
- Burnout

Hospital

- Implementation of compassionate tools in clinical practice.

Rationale

To our knowledge no one has attempted to map out patients' experience of receiving compassionate care, and healthcare professionals' ability and competence in providing compassionate care. Further, no study has attempted to understand whether healthcare providers lack the ability and competence to provide compassionate care is correlated with workplace burnout. Studies have also failed to investigate how best to implement tools and/or interventions for those patient groups and

hospital departments where compassionate care is lacking. If we can use the evidence-based tool to map out these patient and healthcare professional groups, we may be able to implement targeted solutions and increase not only compassionate patient care but also healthcare professionals' well-being. Therefore, this project has been designed and broken into 3 separate phases:

Phase 1.a. Translate the new evidence-based tool from English to Danish.

Phase 1.b. Validate whether the evidence-based tool may be used in a Danish healthcare setting using patients and healthcare professionals from 1 department. If the evidence-based tool is validated, the project will move into phase 2.

Phase 2. Here the evidence-based tool will be pilot tested in four departments again including both patients and staff. If data shows that the evidence-based tool can be used to map out, which patient groups receive the poorest quality of care, and which departments show the poorest ability to provide compassionate care, the project will move into phase 3.

Phase 3. Decisions, based on the data, will allow the hospital to implement various interventions to help increase compassionate care for both patients and healthcare staff.

2.A. Background and literature

Compassion's impact on patients

In a large survey, 87% of patients stated that kind treatment from their doctor was more important than other key considerations such as waiting time, cost, and travel distance (19).

A compassion-based approach to patient interaction positively affects patient health and treatment outcomes. In the U.S. alone, lack of adherence costs between \$100–300 billion annually in avoidable healthcare expenses (20). Compassion is one of many factors that can influence patient adherence (21–24). Other studies show that compassionate care leads to better outcomes for trauma patients (25), reduced pain (26–28), improved blood sugar control, and fewer late diabetic complications (29,30). Additionally, patients are safer and less at risk of medical errors when compassion is part of care. This is due in part to the relationship between compassion, burnout, and medical mistakes, which is discussed later.

In the U.S., a clear correlation has been found between hospitals with a compassionate culture and those that receive high patient ratings (31). One study found that compassion accounted for 65% of the variation in how patients rated their satisfaction with healthcare professionals (32). Patients are also less likely to file complaints when they have experienced a good provider-patient relationship (33). A Danish study from 2023 found that the number of service complaints has increased in general practice and hospitals, particularly concerning communication and behavior (34).

Compassion's impact on staff

Studies indicate that compassion is a key factor in reducing work-related stress and burnout among healthcare professionals (35). Healthcare workers are particularly vulnerable to stress and burnout (36–39), which can have significant consequences for both individuals and society. A 2022 survey

among junior doctors found that 23% of those in clinical specialties were highly or very highly affected by work-related stress in their daily work (40). A similar 2020 survey among senior consultants found that 35% reported feeling stressed (41). A nationwide survey by the Danish National Research Centre for the Working Environment (NFA) conducted between 2012–2018, found that hospital doctors were the occupational group most likely to report work-related stress (42).

International studies have shown a connection between burnout symptoms, empathy fatigue, and number of sick days (43), which leads to significant annual costs for hospitals. Burnout among healthcare professionals has also been linked to lower patient safety (44). This is a critical area of concern given that it is estimated that 1 in 10 patients is harmed during their hospital stay in Denmark (45). While we do not yet have burnout-specific data from Herlev and Gentofte Hospital, the most recent 2024 workplace assessment (APV) showed that 65% of employees reported feeling stressed within the past six months.

Unlike empathy, which can lead to empathy fatigue, compassion activates the brain's reward and joy centers (46). A systematic review found that high levels of compassion were associated with lower burnout, and low levels of compassion with higher burnout (47). A cross-sectional study among physicians found that greater compassion was associated with fewer depressive symptoms, a stronger sense of personal accomplishment, and higher quality of life (48).

Compassion's impact on the organization and socioeconomic factors

The healthcare system is facing a retention and recruitment crisis, leading to staff shortages and longer waiting times. High staff turnover incurs significant costs related to recruitment and onboarding. Investing in staff retention is a more sustainable solution.

When there is a mismatch between an organization's values and the opportunity to act compassionately at work, staff engagement and job satisfaction suffer. Workplace assessments - including at Herlev and Gentofte Hospital (score: 3.3/5 in 2024) - show that one of the most frequent complaints among healthcare staff is lack of time. This presumably refers to time with patients - and thus time to deliver compassionate care. The absence of this element results in decreased job satisfaction, higher risk of burnout, and even emotional detachment or cynicism. If healthcare professionals lack the time to provide necessary compassionate care, their emotional engagement declines, increasing both mental and physical absenteeism.

One study found that lack of compassion was a key factor in safety issues, medical errors, and even death in emergency departments (10). Another study showed that healthcare professionals reporting higher levels of empathy fatigue and/or lower compassion satisfaction tended to treat both colleagues and patients with more irritation and lower quality of care (10). This situation is worsened when professionals feel that the organization's values and demands conflict with their own commitment to compassionate care.

It is therefore crucial that organizations support their healthcare staff by fostering an environment where time and space for compassion are prioritized. When organizational values align with staff's desire to show compassion, it enhances well-being and retention, while reducing absenteeism and burnout (49).

Exit surveys from Herlev and Gentofte Hospital (updated 30.11.2024) revealed that the primary reason for resignation was employees seeking a better psychosocial work environment.

Compassion's economic impact

Reducing sick leave, long-term absence, and burnout among staff leads to financial benefits for the organization. In 2023, sick leave at Herlev and Gentofte Hospital accounted for an average of 15.1 workdays per employee, with numbers as high as 19 and 26 days for certain professions (midwives and nurses, respectively). A 2016 study showed that just one additional point on the burnout scale increased the risk of reduced working hours by 30–50% (50). As discussed earlier, compassion can reduce burnout, and several studies have shown it also reduces both short- and long-term sick leave (43,51).

Compassion may also positively influence the organization's financial bottom line in other ways. As mentioned, compassion can improve patient adherence, reducing the number of visits and hospitalizations. Doctors who show compassion have been found to order fewer tests and treatments, resulting in savings of up to 51% per patient (52).

Creating a common language and eventually a shared value system

Introducing a shared conceptual framework around compassion will highlight the essential caring components of a regenerative and functional healthcare system. Over time, this could lead to compassion becoming a natural and explicit part of the organization's values and vision - one centered around meaning, community, and humanity. A shared value system between staff and the organization can reduce *compassion distress*, which arises when organizational priorities do not support the ability to act compassionately.

Research questions

1. Can the SCQ be used as an evidence-based tool in a Danish healthcare setting?
2. Can the SCQ be used as an evidence-based tool to map out and show how patients experience care, and which groups receive the poorest quality?
3. Will the SCQ-HCPASA (compassion ability) be able to map out and show how healthcare professionals perceive their ability to provide good patient care?
4. Is the SCQ-HCPCSA (compassion competency) correlated with healthcare professionals' level of work burnout and sick leave?
5. Will the SCQ, SCQ-HCPCSA (compassion competence) and the SCQ-HCPASA (compassion ability) provide data that allows for needed interventions to be developed and/or already existing interventions to be implemented?
6. Is there a correlation between healthcare professionals' compassion ability and competence and burnout, sick leave, and turnover rate?

3. Method

3.A. Design:

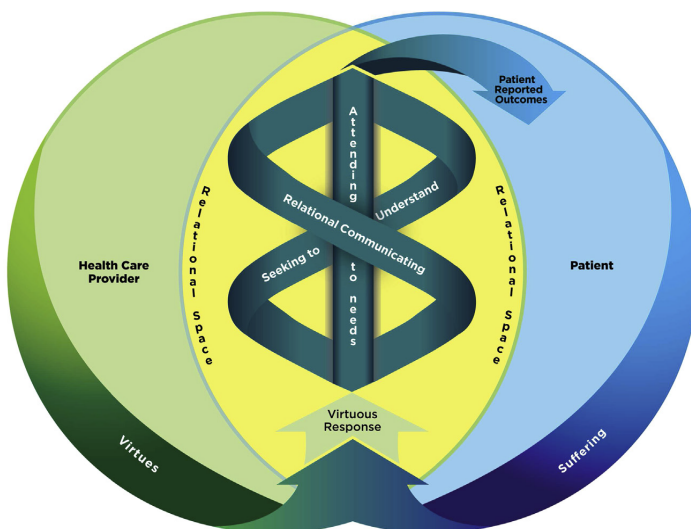
This study includes three sequential phases. Data from the first phase will inform the second phase. Data from the second phase will inform the third phase.

3.B. Phase 1a: Translation of three versions of the SCQ

In collaboration with Dr. Shane Sinclair, University of Calgary, we aim to translate the Sinclair Compassion Questionnaire (SCQ). It is designed for patients and measures their experience of compassion from healthcare professionals through 15 items rated on a 5-point Likert scale, ranging from “strongly disagree” to “strongly agree.” The SCQ takes approximately 3–5 minutes to complete. The questions address areas from the Patient Compassion Model (see figure 1), which is grounded in data from a grounded theory study (53). The model includes seven primary categories:

1. Virtues
2. The relational space
3. Virtuous response
4. Seeking to understand
5. Relational communicating
6. Attending to needs
7. Patient-reported outcomes

Figure 1. Patient Compassion Model



Research shows these categories come together under a single overarching understanding of compassion. The SCQ has demonstrated strong internal consistency (Cronbach’s alpha = 0.96) and test-retest reliability ranging from 0.74 to 0.89.

All translations will follow WHO’s guidelines for multilingual validation, including:

- A forward and backward translation process,
- Pilot testing among a representative sample of patients and healthcare professionals
- Psychometric analyses to ensure validity and reliability.

After translating the SCQ questionnaire, two other situation-adapted versions of the SCQ can also be used, including the SCQ-HCPCSA (compassion competence) and the SCQ-HCPASA (compassion ability). This is because the questions remain the same, with only the introductory explanation differing.

The SCQ-HCPCSA (compassion competence), assesses healthcare professionals' self-perceived competence in expressing compassion. It is structured similarly to the SCQ, but the introductory explanation is adapted to reflect the provider's perspective. The items evaluate the healthcare staff's perceived competencies to express compassion across 15 dimensions relevant to patient care. For example, being attentive, showing a warm presence, understanding patients' needs, and providing comfort.

The SCQ-HCPASA (compassion ability), assesses healthcare professionals' perceived ability to provide compassion within their specific organizational context. It is structured just like the SCQ and SCQ-HCPCSA, just with a different introductory explanation. This tool can help organizations understand the systemic, structural, and/or environmental factors that influence the ability to provide compassionate care in practice. These measures can be useful for organizations seeking to:

- Identify learning and development needs,
- Evaluate compassion-related training programs (pre- and post-assessments),
- Compare healthcare providers' self-perceived competence with patients' reported experiences of compassion as measured by the original SCQ
- Explore workplace barriers and enablers of compassion from the healthcare professional's perspective.

Practical framework

During the translation phase, the SCQ questionnaire will be tested with 10 patients and 10 staff members. The 10 patients and 10 staff members will be recruited from the Anesthesia Operation and Intensive Care department. The aim of this pilot phase is to test the comprehensibility of the questionnaire. Recruitment will be carried out by a research assistant who will be physically present in the department. In collaboration with clinical staff, the assistant will ensure that recruitment takes place at suitable times. If the patient or the staff member agrees to answer the SCQ, the research assistant will also ask if the patient or the staff member is willing to participate in an interview. If the patient agrees, their feedback will be collected through individual semi-structured interviews (recorded and transcribed using Teams). Written and informed consent will be obtained before participation. We will aim to include at least two individuals of each gender in both the patient and staff groups. Among staff, we aim to include professionals from different disciplines (e.g., doctors, nurses, allied health staff). In the pilot procedure participants will complete the questionnaire independently after a brief introduction by the research assistant, mirroring the way the questionnaire will be administered in later study phases. Following this, participants will be invited to take part in a semi-structured interview (approximately 20 minutes), where they will be asked whether the questions were understandable, relevant, and whether anything was missing.

Recruitment

Inclusion criteria

Patients must be Danish-speaking, age 18+, and have had contact with at least one healthcare professional during admission.

Staff members must be employed at the Anesthesia, Operation and Intensive Care department (e.g., physicians, nurses, social and healthcare assistants) and must be Danish-speaking.

Exclusion Criteria

Patients under the age of 18 years and not fluent in Danish. Patients with cognitive impairment that may prevent independent completion of the questionnaire or participation in an interview. Staff members not fluent in Danish or involved in the design, translation, or analysis of the questionnaire.

Interview questions:

1. Were any of the questions difficult to understand?
2. If so, what made it difficult to understand them?
3. Would you have used different wording for some of the questions?
4. Is anything missing from the questionnaire?

Data management and data storage:

The initial interviews conducted with patients will be recorded using Teams. Teams has a function that allows the researchers to transcribe the interviews. The interviews may be stored on Teams for up to a year but can be deleted earlier. As soon as possible, data will be removed from Teams to a legally protected and secure folder on the hospital's server, which is only accessible to the researchers on this team. There will be adherence to the Danish Data Protection Act 1998. Data will only be used in Denmark.

Data analysis

Based on the interviews and the data collected from them, the two main PIs will collaborate with Dr. Shane Sinclair to ensure that all questions are understood in the way they are supposed to. If we have to make adjustments, based on the collected data, we will make sure that these changes are aligned with Dr. Sinclair's understanding and knowledge of the SCQ.

3.C. Phase 1b. Validation of the SCQ

Practical framework

Research assistants will recruit 400 patients and 150 healthcare professional and collect the data, to be able to validate the SCQ. Only data from the patients will be used to validate the SCQ. The reason for starting to collect data from the healthcare professionals' is only for the purpose of being able to compare patient responses with healthcare professionals' responses in phase 2.b. The questionnaire will be completed independently after the patient has received both oral and written information regarding the study by a research assistant. Patients and healthcare professionals included in phase 1 of the study will be recruited from the department of Anesthesia Operation and Intensive Care, Department of Nephrology, b. Emergency Department (ED) or d. Department of Orthopedic Surgery Rheumatology and Orthopedics

These departments were selected because of 1) a sufficiently large patient intake and adequate patient flow, to ensure representation of both outpatient and acute patients, and 2) an expressed

interest in participating and support from department leadership. Once data is collected, results will be analyzed.

Recruitment

Inclusion criteria:

1. A patient at the of Anesthesia, Operation, and Intensive Care department, Department of Nephrology, b. Department of Internal Medicine, c. Emergency Department (ED) or d. Department of Orthopedic Surgery Rheumatology and Orthopedics
2. Age 18-100+
3. All genders
4. Danish speaking
5. Patients must have had contact with at least one healthcare professional before completing the questionnaire.

Exclusion criteria:

1. Age 0-17
2. Non-Danish speaking
3. Not a patient at the Anesthesia, Operation and Intensive Care Department, Department of Nephrology, b. Department of Internal Medicine, c. Emergency Department (ED) or d. Department of Orthopedic Surgery Rheumatology and Orthopedics
4. Patients with a cognitive impairment that may prevent completion of the questionnaire.
5. No contact with a healthcare professional

Demographic information of the patients

The following data will be collected from those who consent to participate:

1. CPR number
2. Age
3. Gender
4. Religion/spirituality
5. Postal code
6. Education level
7. Employment status [employed yes/no, if yes, current job]
8. Children yes/no, if yes: children under 18 years [yes/no], living at home [yes/no], living alone or with others [yes/no],
9. Ethnicity with the following categories: ethnic Danish, western background (e.g. EU, USA, Canada, Australia, New Zealand), Middle Eastern or North African (e.g. Turkey, Lebanon, Iraq, Morocco, Pakistan, Iran), African (e.g. Somalia, nigeria, Eritrea), South or Southeast Asian (e.g. India, Sri Lanka, Vietnam, Philippines), East Asian (e.g. China, Korea, Japan), Greenlandic), other ethnic background
10. Known physical or mental illness [yes/no, if yes, which known illnesses]
11. Number of hospitalization days during the current visit
12. Number of hospitalization days in the past year
13. Number of hospital contacts in the past year
14. Department/unit the patient belongs to

15. Seen by a doctor during the current visit (yes/no, if yes, what type of doctor [specialty], possibly a "don't know" option)
16. Seen by a nurse during the current visit (yes/no)
17. Seen by other healthcare personnel during the current visit (yes/no).

Compassionate Care data
SCQ data

Patient data:

Relevant health data registries will be accessed to cross-reference and validate the data obtained in the study.

The following data will be collected from those who do not consent to participate:

1. Age
2. Gender
3. Reason for not participating in the study

We will collect this data to determine whether the sample is representative.

Data collection Procedure: Healthcare professionals

Healthcare professionals, who have received written and oral information regarding the study and have agreed to participate, will complete demographic data, the SCQ-HCPCSA, SCQ-HCPCSA, and the Copenhagen Burnout Inventory (CBI) (54). The CBI is a self-report questionnaire designed to measure burnout. The work-related burnout subscale will be used. The subscale includes 7 questions, using a 5-point rating scale: to a very low degree, a low degree, somewhat, to a high degree, to a very high degree, for some of the questions, and for others a 5-point Likert scale from never/almost never, seldom, sometimes, often, always. The internal validity of the CBI is Cronbach's alpha 0.87. The CBI is available in Danish and will be used to assess the mental well-being of healthcare professionals.

HCP inclusion criteria

1. Employed in one of the four departments included (phase 1b and 2): a. Department of Nephrology, b Emergency Department, d. Department of Orthopedic Surgery or e. Department of Anesthesia, Operation and Intensive Care.
2. All genders
3. Danish speaking
4. Must have engaged with a patient

HCP exclusion criteria

1. Not employed in one of the four departments included (a. Department of Nephrology, b. Emergency Department, d. Department of Orthopedic Surgery or e. Department of Anesthesia, Operation and Intensive Care)
2. Not Danish speaking

Demographic data for the healthcare professionals

1. Professional role/education
2. Seniority/years of clinical experience
3. Children (yes/no; if yes: under 18? living at home?)
4. Living situation (alone or with others)
5. Postal code
6. Ethnicity [with the following categories:; e.g., ethnic Danish, western background (e.g. EU, USA, Canada, Australia, New Zealand), Middle Eastern or North African (e.g. Turkey, Lebanon, Iraq, Morocco, Pakistan, Iran), African (e.g. Somalia, Nigeria, Eritrea), South or Southeast Asian (e.g. India, Sri Lanka, Vietnam, Philippines), East Asian (e.g. China, Korea, Japan), Greenlandic), other ethnic background. ethnic Turkish, etc.]
7. Age and gender
8. Job satisfaction
9. Long-term sick leave within the past 2 years (yes/no; if yes: If yes was the sick leave between 8-30 days, or more than 30 days).

Self-report questionnaire data collected:

SCQ-HPCSA

SCQ-HCPASA

Copenhagen Burnout Inventory (CBI) – work-related burnout subscale

Additionally, data will be accessed regarding:

- Sick leave (on a unit and professional group level).
- Turnover rate (on a unit and professional group level)
- Results from the 8-item staff well-being survey at the department/unit and professional group level

If the respondent is a hospital porter, additional questions will be asked about the amount of patient contact and self-assessed role.

Note: It is still undecided whether responses from porters will be included in the final analyses.

Statistical analysis

Sampling principles for data collection:

Two age groups will be pre-specified: ≤ 60 years and ≥ 61 years. Responses will be collected until there are 200 in each group (minimum 150). Psychometric analyses will be conducted to ensure validity and reliability. Psychometric validity will be assessed using confirmatory factor analysis (CFA) and item response theory (IRT). As part of the analysis, dimensionality, item fit, and invariance across subpopulations will be evaluated. Subsequently, it will be assessed whether the SCQ is appropriate for the population (e.g., floor/ceiling effects), whether the measurement precision of the SCQ is sufficiently good, and an estimate of reliability will be calculated.

3.D. Phase 2: Measuring Patients' and Healthcare Professionals' Experience of Compassion

Practical framework

The aim in phase 2 is to gain an overview of, and map out the departments, where compassionate care is already being practiced and where additional support is needed. Additionally, this will make it possible to identify patient groups that report receiving less compassionate care than others, enabling the organization to address social inequality through targeted interventions. The SCQ-HCPCSA, and the SCQ-HCPASA will help to:

- Identify where within the organization healthcare professionals' ability to demonstrate compassion is challenged due to structural and organizational barriers.
- Map departments, healthcare professionals' groups, and patient groups with the greatest need for targeted and supplementary compassion initiatives and tools.
- Map patients' general experience of receiving compassionate care from healthcare professionals.

Recruitment:

We will recruit both patients and healthcare professionals in this phase. Four departments have been chosen to participate in the study. The following departments were selected to ensure diversity in clinical context, patient pathways, and organizational challenges relevant to compassionate care:

- a. Department of Nephrology
- b. Department of Internal Medicine
- c. Emergency Department (ED)
- d. Department of Orthopedic Surgery

Data collection procedure: Patients

Same demographic information and questionnaire will be administered to the patients as in phase 1.b. Patients who do not speak Danish well enough may be given the English version of the SCQ. These will be treated as a selected subpopulation. The patients must have had contact with at least one healthcare professional before completing the questionnaire. They will be asked whom they spoke with (e.g., nurse, doctor, other healthcare personnel). Research assistants (medical or nursing students) will collect the data by asking patients, who have received written and oral information regarding the study and have agreed to participate, to complete demographic data and the SCQ. The same informed consent form, used in Phase 1.b will be used here as well as collecting all the same type of data as in phase 1.b.

Patient inclusion and exclusion criteria

Patient inclusion criteria:

1. A patient at either the a. Department of Nephrology, b. Department of Internal Medicine, c. Emergency Department (ED) or d. Department of Orthopedic Surgery Rheumatology and Orthopedics
2. Age 18-100+
3. All genders
4. Danish speaking (or English speaking)

5. Must have had contact with at least one healthcare professional before completing the questionnaire.

Patient exclusion criteria:

1. Age 0-17
2. Non-Danish or English speaking
3. Not a patient at the a. Department of Nephrology, b. Department of Internal Medicine, c. Emergency Department (ED) or d. Department of Orthopedic Surgery.
4. No contact with a healthcare professional
5. Has previously completed the questionnaire

Non-Danish speaking patients:

Patients who do not speak Danish well enough may be given the English version of the SCQ. These will be treated as a selected subpopulation. The patients must have had contact with at least one healthcare professional before completing the questionnaire. They will be asked whom they spoke with (e.g., nurse, doctor, other healthcare personnel). Written and oral information and the informed consent form regarding the study will be in English.

Demographic information of the patients

The following data will be collected from those who consent to participate:

1. CPR number
2. Age
3. Gender
4. Religion/spirituality
5. Postal code
6. Education level
7. Employment status [employed yes/no, if yes, current job]
8. Children, yes/no, if yes: children under 18 years [yes/no], living at home [yes/no], living alone or with others [yes/no],
9. Ethnicity [with the following categories: ethnic Danish, western background (e.g. EU, USA, Canada, Australia, New Zealand), Middle Eastern or North African (e.g. Turkey, Lebanon, Iraq, Morocco, Pakistan, Iran), African (e.g. Somalia, Nigeria, Eritrea), South or Southeast Asian (e.g. India, Sri Lanka, Vietnam, Philippines), East Asian (e.g. China, Korea, Japan), Greenlandic), other ethnic background.
10. Reason for hospitalization
11. Known physical or mental illness [yes/no, if yes, which known illnesses]
12. Number of hospitalization days during the current visit
13. Number of hospitalization days in the past year
14. Number of hospital contacts in the past year
15. Department/unit the patient belongs to
16. Seen by a doctor during the current visit (yes/no, if yes, what type of doctor [specialty], possibly a "don't know" option)
17. Seen by a nurse during the current visit (yes/no)
18. Seen by other healthcare personnel during the current visit (yes/no).

Compassionate Care data

SCQ data

Patient data:

Relevant health data registries will be accessed to cross-reference and validate the data obtained in the study.

Sample size: Patients

A total of maximum 1,500 patients (minimum 1000) will be included from 4 departments (with multiple units under each department). If Phase 1b shows significant floor or ceiling effects in SCQ responses among Danish patients, the sample size may be adjusted accordingly.

Data collection Procedure: Healthcare professionals

The same procedure will be used in phase 2 as in phase 1.b. Healthcare professionals, who have received written and oral information regarding the study and have agreed to participate, will complete demographic data, the SCQ-HCPCSA, SCQ-HCPCSA, and the Copenhagen Burnout Inventory (CBI) (54). The CBI is a self-report questionnaire designed to measure burnout. The work-related burnout subscale will be used. The subscale includes 7 questions, using a 5-point rating scale: to a very low degree, a low degree, somewhat, to a high degree, to a very high degree, for some of the questions, and for others a 5-point Likert scale from never/almost never, seldom, sometimes, often, always. The internal validity of the CBI is Cronbach's alpha 0.87. The CBI is available in Danish and will be used to assess the mental well-being of healthcare professionals.

HCP inclusion criteria

5. Employed in one of the four departments included (phase 1b and 2): a. Department of Nephrology, b. Department of Internal Medicine, c. Emergency Department, or d. Department of Orthopedic Surgery All genders
6. Danish speaking
7. Must have engaged with a patient

HCP exclusion criteria

3. Not employed in one of the four departments included (a. Department of Nephrology, b. Department of Internal Medicine, c. Emergency Department, or d. Department of Orthopedic Surgery)
4. Not Danish speaking

Demographic data for the healthcare professionals

10. Professional role/education
11. Seniority/years of clinical experience
12. Children (yes/no; if yes: under 18? living at home?)
13. Living situation (alone or with others)
14. Postal code

15. Ethnicity [with the following categories:; e.g., ethnic Danish, western background (e.g. EU, USA, Canada, Australia, New Zealand), Middle Eastern or North African (e.g. Turkey, Lebanon, Iraq, Morocco, Pakistan, Iran), African (e.g. Somalia, Nigeria, Eritrea), South or Southeast Asian (e.g. India, Sri Lanka, Vietnam, Philippines), East Asian (e.g. China, Korea, Japan), Greenlandic), other ethnic background. ethnic Turkish, etc.]
16. Age and gender
17. Job satisfaction
18. Long-term sick leave within the past 2 years (yes/no; if yes: If yes was the sick leave between 8-30 days, or more than 30 days).

Self-report questionnaire data collected:

SCQ-HPCSA

SCQ-HCPASA

Copenhagen Burnout Inventory (CBI) – work-related burnout subscale

Additionally, data will be accessed regarding:

- Sick leave (on a unit and professional group level).
- Turnover rate (on a unit and professional group level)
- Results from the 8-item staff well-being survey at the department/unit and professional group level

If the respondent is a hospital porter, additional questions will be asked about the amount of patient contact and self-assessed role.

Note: It is still undecided whether responses from porters will be included in the final analyses.

Sample size: Healthcare professionals

At least 400 staff members (a maximum of 600) will be included in total. Staff will be sampled based on professional groups and will include a minimum of:

- 100 physicians
- 100 nurses
- 50 other healthcare professionals with patient contact (e.g., psychologists, physiotherapists, occupational therapists, social and health assistants, lab technicians)
- 20 porters

Data management and data storage for both patients and HCP's

All patient and healthcare professional data will be collected and stored in Redcap. When the data is ready to be analyzed, one or both PIs will meet with Professor Karl Bang Bang Christensen at the University of Copenhagen and access Redcap. The data will then be transferred to the University's secure network drives using a USB key. PI Camilla Birgitte Sørensen will not be blinded to the data as she has to be able to be of assistance if there is a need to help out with data collection. PI Nanja Holland Hansen will be blinded. There will be adherence to the Danish Data Protection Act 1998. Data will only be used in Denmark.

Statistical analysis

Initial analyses will use multilevel models with SCQ scores at the outcome variable. This will help quantify variation across departments and units. This is done in two separate analyses using patient data and data from staff, respectively. The latter analysis will be extended to also incorporate covariation between SCQ-HCPCSA and SCQ-HCPASA. Further analysis using multilevel models will combine the two data sources to evaluate if patient-level SCQ is associated with staff compassion competence and staff compassion ability at the unit or department level. Finally, multilevel analyses using individual staff levels of SCQ scores will evaluate the potential impact on well-being, burnout, sickness absence rates. Finally, the study will evaluate whether differences between subgroups identified in Study 1 are replicated in Study 2.

3.E. Phase 3: Implementation of existing compassion-enhancing interventions and/or development of new initiatives based on findings from part 2.

The goal is not to prove the necessity of a compassionate and humane healthcare system—this is already well-evidenced, but rather to explore how, where, and for whom compassion-promoting initiatives can be implemented and tailored in a skillful and targeted way that supports both patients and staff. This aligns with the hospital's ambition that everyone—patients, relatives, and staff—is *Well Treated* and continues the work from the project *Mental Health*. Instead of offering general tools like compassion courses to all employees, the aim is to identify specific needs across the many different contexts and work areas in a large and diverse hospital like Herlev and Gentofte, to create a customized and effective approach that delivers real value, impact, and financial benefit.

To this end, we will seek the expertise of Senior Scientist Ph.D., Dipl-Psych., Peter Dieckmann, psychologist, Copenhagen Academy for Medical Education and Simulation, Professor of Healthcare Education and Patient Safety, University of Stavanger, Norway, External Lecturer at the University of Copenhagen, who has extensive experience with implementation. An anthropologist will be invited to participate in the study to gain a greater understanding of what types of tools, skills and/or interventions are needed to address the compassion gap experienced by patients and healthcare professionals.

General considerations for all three phases:

Data

We will not collect any biological material. We will also not collect any data from patient files.

Risk, adverse effects, and disadvantages

This research project only aims to collect demographic information and self-reported data from three questionnaires. It is voluntary whether patients and healthcare professionals want to participate in the study. Therefore, we do not foresee any risks or adverse effects. It cannot be ruled out that some patients may worry that if they do not participate it will negatively impact their care while at the hospital. Likewise, it cannot be ruled out that some healthcare professionals may worry that if they do not participate it will negatively impact their employment. Every measure to ensure participants that this is not the case will be taken when delivering the oral and written consent form. This potential adverse effect does not outweigh the benefits to both patients and healthcare

professional's long term. The outcomes of the study will result in long-term changes in how patients receive compassionate care and healthcare professionals' well-being.

Data management and storage of data

All data will be collected and stored in Redcap. When the data is ready to be analyzed, one or both PI's will meet with Professor Karl Bang Christensen at Copenhagen University and access Redcap. The data will be put on a USB key and be exported into Professor Karl Bang Christensen's data analysis program. PI Camilla Birgitte Sørensen will not be blinded to the data as she has to be able to be of assistance if there is a need to help out with data collection. PI Nanja Holland Hansen will be blinded. There will be adherence to the Danish Data Protection Act 1998. Data will only be used in Denmark.

Budget

PI Camila Birgitte Sørensen and PI Nanja Holland Hansen have taken the initiative to conduct this study. The study has been presented at the weekly board of directors meeting May13th 2025. An email was received on May15th that the board of directors had agreed to implement and fund this project. Therefore, the budget is internally funded by Herlev Gentofte Hospital (HGH). Some of the funding will be given directly to both PI's as salary as they will be employed in a 20% position as an MD and a postdoctoral and psychologist at HGH to undertake this project.

Item	Phase 1A (3 mo)	Phase 1B (9 mo)	Year 1 Total	Phase 2 (10 mo)	Phase 3 (3 mo)
Project management salary*	67700	203100	270800	403233	67700
Statistical analysis at KU	30000	52000	82000	80000	
Student assistant (10 hrs/week)**	21840		21840		
Consultancy support		25000	25000	25000	75000
Student assistants (2/3 persons, 22 hrs/week)**		144144	144144	360360	
Purchase of 5 iPads (DKK 5,000 each)		25000	25000		
Meetings/national conferences		10000	10000	10000	10000
Purchase of computer	7500		7500		

Publication fee (2 publications)		30000	30000	30000	
Minor operational expenses	10000	10000	20000	20000	
Implementation materials					25000
TOTAL per year	137040	499244	636284	928593	177700
TOTAL in project period	1742577				

* Project management will be carried out by the two PI's, Camilla Sørensen and Nanja Hansen, each contributing one day per week (a total of two days per week) during Phases 1A and 1B. In Phase 2, Camilla will provide full-time project management for three months and one day per week for the last 7 months. Nanja will contribute one day per week in the 10 months of phase 2. Salaries for Camilla and Nanja are calculated at 20% of their current salary levels.

** The hourly wage for research student assistants is DKK 182 per hour.

Recruitment and informed consent

Patients and healthcare providers will be recruited from the four aforementioned departments at Herlev and Gentofte Hospital. A research assistant will be present in each department to identify potential participants in collaboration with clinical staff. Staff members will help identify patients who meet the inclusion criteria and are in a suitable condition to be approached. Healthcare providers will be recruited directly through internal communication in the department (e.g., email, staff meetings, or one-on-one contact during shifts).

Initial contact

The research assistant will approach potential participants in person. For patients, this will be done in their hospital room or bed area, depending on clinical appropriateness and patient condition. Clinical condition is defined as the patient being alert, oriented and clinically stable. Patient appropriateness is defined as the absence of ongoing medical procedures, the availability of sufficient time and privacy, and the professional judgment (by the clinical staff and the research assistant) that approaching the patient will not cause undue burden or interfere with care. For staff, the assistant will approach them during working hours at appropriate times. The assistant will briefly introduce the project, explain its purpose, and ask if the person would like to hear more about participating.

How, when, and by whom is the oral and written consent given

Participants will be invited to a short one-on-one conversation, where the oral and written information will be presented by the research assistant. Participants will receive a written

information sheet outlining the purpose, procedures, potential risks, and benefits of the study. They will be encouraged to read it thoroughly and after that an oral introduction will be given by the research assistant. Participants are welcome to bring a relative, friend, or colleague to the conversation. All questions will be answered before any consent is obtained.

If the participant agrees to take part, they will be asked to sign a written informed consent form. This must happen before any data is collected.

How do we ensure that the conversation is not disrupted?

The research assistant will only approach patients when their condition allows, and at times when no ongoing medical procedures, rounds, or personal care are taking place. This decision will be made in collaboration with clinical staff. For healthcare providers, contact will be made during quieter periods (e.g., outside of peak clinical activity or during scheduled breaks) to ensure privacy and minimal disruption. If needed, the conversation can be postponed or resumed later to ensure full understanding and comfort.

How much time does the patient and the healthcare provider have to think about whether they want to participate or not?

Participants will be given as much time as they need to consider their participation. If they are uncertain, the research assistant can return later in the day or the following day. There is no pressure or deadline for making a decision.

When do we collect the informed consent form?

Informed consent will be collected **before** the participant completes the questionnaire or participates in any interview. No data will be collected or recorded until the signed consent form has been obtained.

8. Informed consent: Patients

Participant Information for Participation in a Scientific Study

Title of the Study: A Future Tool to Strengthen Compassion in a Danish Hospital Setting

You are being invited to participate in a scientific study conducted by Herlev and Gentofte Hospital. The study is led by Physician Camilla Birgitte Sørensen and Psychologist Nanja Holland Hansen.

Before deciding whether to participate, it is important that you fully understand the purpose of the study and what participation entails. We therefore ask you to read this information carefully.

You will be invited to a conversation about the study, where this information will be explained in more detail and where you will have the opportunity to ask questions. You are welcome to bring a family member, friend, or acquaintance.

If you decide to participate, you will be asked to sign an informed consent form. Please remember that you are entitled to time for consideration before making your decision.

Participation is voluntary. You may withdraw your consent at any time without providing a reason. Your decision will not affect your treatment.

Purpose of the Study

The aim is to promote and strengthen compassion at Herlev and Gentofte Hospital through a systematic and research-based approach. The goal is to implement a new evidence-based tool to measure and improve compassion in a hospital context, focusing on both patients and staff. This is expected to enhance patient experiences, increase safety and well-being, and improve the psychosocial work environment.

The project consists of three phases:

Phase 1a+b: Translation and validation of three versions of the Sinclair Compassion Questionnaire (SCQ).

Phase 2: Implementation of the SCQ. The questionnaires will be used to:

- Identify where healthcare professionals' ability to provide compassion is challenged by organizational structures and barriers
- Identify departments, professional groups, and patient groups with the greatest need for targeted compassion initiatives
- Map patients' experiences of receiving compassionate care

Phase 3: Implementation of existing compassion-based interventions and/or development of new initiatives based on findings from Phase 2.

Study Plan

- Sept 2025 – Dec 2025: Translation of SCQ
- Jan 2026 – Sept 2026: Data collection (400 patients and 150 healthcare professionals from anesthesia, orthopedic surgery, nephrology department, Emergency department ,) + validation article
- Oct 2026 – July 2027: Data collection (1000 patients and minimum 250 staff across four departments) + results article

Benefits

The study aims to improve compassionate care for patients and well-being among healthcare professionals.

Risks and Side Effects

There are no known risks or disadvantages associated with participation.

Withdrawal and Termination

Participants will not be excluded unless they request it. The study may be discontinued if funding is unavailable or recruitment is not feasible.

Financial Information

- Initiated by Camilla Birgitte Sørensen and Nanja Holland Hansen, supported by Herlev and Gentofte Hospital
- Both are employed 20% on the project

Access to Results

Results (positive, negative, or inconclusive) will be published in peer-reviewed journals and on the hospital's website.

Project Number:

For further information, please contact:

Camilla Birgitte Sørensen

camilla.birgitte.soerensen@regionh.dk

Nanja Holland Hansen

nanja.holland.hansen@regionh.dk

Camilla Birgitte Sørensen

Nanja Holland Hansen

9. Informed Consent: Healthcare Professionals

Participant Information for Participation in a Scientific Study

Title of the Study: A Future Tool to Strengthen Compassion in a Danish Hospital Setting

You are being invited to participate in a scientific study conducted by Herlev and Gentofte Hospital. The study is led by Physician Camilla Birgitte Sørensen and Psychologist Nanja Holland Hansen.

Before deciding whether to participate, it is important that you fully understand the purpose of the study and what participation entails. We therefore ask you to read this information carefully.

You will be invited to a conversation about the study, where this information will be explained in more detail and where you will have the opportunity to ask questions. You are welcome to bring a family member, friend, or acquaintance.

If you decide to participate, you will be asked to sign an informed consent form. Please remember that you are entitled to time for consideration before making your decision.

Participation is voluntary. You may withdraw your consent at any time without providing a reason. Your decision will not affect your treatment.

Purpose of the Study

The aim is to promote and strengthen compassion at Herlev and Gentofte Hospital through a systematic and research-based approach. The goal is to implement a new evidence-based tool to measure and improve compassion in a hospital context, focusing on both patients and staff. This is expected to enhance patient experiences, increase safety and well-being, and improve the psychosocial work environment.

The project consists of three phases:

Phase 1: Translation and validation of three versions of the Sinclair Compassion Questionnaire (SCQ).

Phase 2: Implementation of the SCQ. The questionnaires will be used to:

- Identify where healthcare professionals' ability to provide compassion is challenged by organizational structures and barriers
- Identify departments, professional groups, and patient groups with the greatest need for targeted compassion initiatives
- Map patients' experiences of receiving compassionate care

Phase 3: Implementation of existing compassion-based interventions and/or development of new initiatives based on findings from Phase 2.

Study Plan

- Sept 2025 – Dec 2025: Translation of SCQ
- Jan 2026 – Sept 2026: Data collection (400 patients and 150 healthcare professionals from anesthesia, orthopedic surgery, nephrology department, and the emergency department) + validation article
- Oct 2026 – July 2027: Data collection (1000 patients and minimum 250 staff across four departments) + results article

Benefits

The study aims to improve compassionate care for patients and well-being among healthcare professionals.

Risks and Side Effects

There are no known risks or disadvantages associated with participation.

Withdrawal and Termination

Participants will not be excluded unless they request it. The study may be discontinued if funding is unavailable or recruitment is not feasible.

Financial Information

- Initiated by Camilla Birgitte Sørensen and Nanja Holland Hansen, supported by Herlev and Gentofte Hospital
- Both are employed 20% on the project

Access to Results

Results (positive, negative, or inconclusive) will be published in peer-reviewed journals and on the hospital's website.

Project Number:

For further information, please contact:

Camilla Birgitte Sørensen

camilla.birgitte.soerensen@regionh.dk

Nanja Holland Hansen

nanja.holland.hansen@regionh.dk

Camilla Birgitte Sørensen

Nanja Holland Hansen

10. Questionnaires

The SCQ

The SCQ-HCPCSA (Compassion Competence)

SCQ-HCPASA (Compassion Ability)

The CBI

*See attached PDF for the questionnaires

11. Publication

Results of the study will be published in peer-review journals independent of neutral, positive, negative or inconclusive results.

12. Ethical considerations

The participants will receive information before the study in both oral and written form. Choosing to participate in the study or decline will not influence the patient's care at the hospital. Choosing to participate in the study or decline will not influence the healthcare professional's employment at the hospital. The study will be approved by both the Danish Data Agency and The National Committee on Health Research Ethics prior to initiation.

13. References

1. Hansen NH. Vi skal til at tale om compassion [Internet]. [cited 2022 Mar 14]. Available from: <https://www.centerforcompassion.dk/vi-skal-tale-compassion/>
2. Lazarus RS. Emotion and adaptation. Oxford University Press; 1991.
3. Lama D, Thupten J. The power of compassion. HarperCollins Delhi, India; 1995.
4. Neff K. Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self identity*. 2003;2(2):85–101.
5. Kanov JM, Maitlis S, Worline MC, Dutton JE, Frost PJ, Lilius JM. Compassion in Organizational Life. *Am Behav Sci*. 2004 Feb;47(6):808–27.
6. Gilbert P. The Compassionate Mind [Internet]. Little, Brown Book Group; 2009. 13 p. Available from: <https://books.google.dk/books?id=9zafBAAAQBAJ>
7. Feldman C, Kuyken W. Compassion in the landscape of suffering. *Contemp Buddhism* [Internet]. 2011 May 1;12(1):143–55. Available from: <https://doi.org/10.1080/14639947.2011.564831>
8. Pommier EA. The compassion scale (Doctoral dissertation). Univ Texas Austin, Texas, United States. 2010;
9. Strauss C, Lever Taylor B, Gu J, Kuyken W, Baer R, Jones F, et al. What is compassion and how can we measure it? A review of definitions and measures. *Clin Psychol Rev* [Internet]. 2016 Jul 1 [cited 2022 Mar 3];47:15–27. Available from: <http://dx.doi.org/10.1016/j.cpr.2016.05.004>
10. Boss H, MacInnis C, Simon R, Jackson J, Lahtinen M, Sinclair S. What role does compassion have on quality care ratings? A regression analysis and validation of the SCQ in emergency department patients. *BMC Emerg Med* [Internet]. 2024 Dec 1 [cited 2025 Jan 11];24(1):1–11. Available from: <https://bmcmemergmed.biomedcentral.com/articles/10.1186/s12873-024-01040-8>
11. Goodrich J, Cornwell J. Seeing the person in the patient: The Point of Care review paper - Goodrich, Cornwell - The King's Fund, December 2008. [cited 2022 Mar 15]; Available from: www.kingsfund.org.uk/publications
12. Hudacek SS. Dimensions of caring: a qualitative analysis of nurses' stories. *J Nurs Educ*. 2008 Mar;47(3):124–9.
13. Patel S, Pelletier-Bui A, Smith S, Roberts MB, Kilgannon H, Trzeciak S, et al. Curricula for empathy and compassion training in medical education: A systematic review. *PLoS One* [Internet]. 2019 Aug 1 [cited 2022 Mar 15];14(8):e0221412. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0221412>
14. Demirel Y, Çağatay HT, Ertuğrul B, Başaran E, Salimoğlu S. The effect of the compassion levels of healthcare workers on their psychological well-being. *Work* [Internet]. 2024 Jan 12 [cited 2024 Dec 30];77(1):253–62. Available from: <https://pubmed.ncbi.nlm.nih.gov/37638464/>

15. World Health Organisation. The impact of COVID-19 on health and care workers: a closer look at deaths. Working Paper 1. [Internet]. 2021 Sep [cited 2022 Mar 21]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/345300/WHO-HWF-WorkingPaper-2021.1-eng.pdf>
16. Walvik L, Wissing Brejnebøl M, Ravn AT, Jensen RG, Christensen AK, Von Buchwald C. The impact of the COVID-19 pandemic on The impact of the COVID-19 pandemic on mental health among healthcare workers in mental health among healthcare workers in ear-nose-throat clinics ear-nose-throat clinics. *Orig Artic Dan Med J*. 2021;68(6):1210073.
17. Styrelsen for Patientsikkerhed (STPS). Sikkerhed for sundhedspersoner er sikkerhed for patienter [Internet]. 2020 [cited 2022 Mar 21]. Available from: <https://stps.dk/da/udgivelser/2020/sikkerhed-for-sundhedspersoner-er-sikkerhed-for-patienter/~media/79D08AC0BC224882BF461734D8032D04.ashx>
18. Det Etiske Råd. OMSORG I SUNDHEDS VAESNET Redegørelse [Internet]. 2022 [cited 2022 Mar 21]. Available from: https://www.etiskraad.dk/~media/Etisk-Raad/Etiske-Temaer/Sundhedsvaesnet/Publikationer/DER_Omsorg-i-sundhedsvaesnet_2022_Redegeelse.pdf?la=da
19. Davis L. Dignity Health Survey Finds Majority of Americans Rate Kindness as Top Factor in Quality Health Care | Business Wire [Internet]. 2013 [cited 2022 Mar 15]. Available from: <https://www.businesswire.com/news/home/20131113005348/en/Dignity-Health-Survey-Finds-Majority-of-Americans-Rate-Kindness-as-Top-Factor-in-Quality-Health-Care>
20. Booker C, Mazzarelli A, Trzeciak S. Compassionomics: The Revolutionary Scientific Evidence That Caring Makes a Difference [Internet]. Studer Group, L.L.C.; 2019. Available from: <https://books.google.dk/books?id=uQrdvAEACAAJ>
21. Flickinger TE, Saha S, Roter D, Korthuis PT, Sharp V, Cohn J, et al. Clinician empathy is associated with differences in patient-clinician communication behaviors and higher medication self-efficacy in HIV care. *Patient Educ Couns* [Internet]. 2016 Feb 1 [cited 2022 Mar 20];99(2):220. Available from: <https://pubmed.ncbi.nlm.nih.gov/26510904/>
22. Norberg A, Nelson J, Holly C, Jewell ST, Lieggi M, Salmond S. Experiences of HIV-infected adults and healthcare providers with healthcare delivery practices that influence engagement in US primary healthcare settings: A qualitative systematic review. *JBIS Database Syst Rev Implement Reports* [Internet]. 2019 Jun 1 [cited 2022 Mar 20];17(6):1154–228. Available from: https://journals.lww.com/jbisr/Fulltext/2019/06000/Experiences_of_HIV_infected_adults_and_healthcare.14.aspx
23. Beach MC, Keruly J, Moore RD. Is the quality of the patient-provider relationship associated with better adherence and health outcomes for patients with HIV? *J Gen Intern Med* [Internet]. 2006 Jun [cited 2022 Mar 20];21(6):661–5. Available from: <https://pubmed.ncbi.nlm.nih.gov/16808754/>
24. Haskard Zolnier KB, Dimatteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care* [Internet]. 2009 Aug [cited 2022 Mar 20];47(8):826–34. Available from: <https://pubmed.ncbi.nlm.nih.gov/19584762/>
25. Steinhausen S, Ommen O, Antoine SL, Koehler T, Pfaff H, Neugebauer E. Short- and long-term subjective medical treatment outcome of trauma surgery patients: the importance of physician empathy. *Patient Prefer Adherence* [Internet]. 2014 Sep 18 [cited 2022 Mar 20];8:1239. Available from: <https://pubmed.ncbi.nlm.nih.gov/25173813/>
26. Weiss R, Vittinghoff E, Fang MC, Cimino JEW, Chasteen KA, Arnold RM, et al. Associations of Physician Empathy with Patient Anxiety and Ratings of Communication in Hospital Admission Encounters. *J Hosp Med* [Internet]. 2017 Oct 1 [cited 2022 Mar 20];12(10):805–10. Available from: <https://onlinelibrary.wiley.com/doi/full/10.12788/jhm.2828>

27. Roche J, Harmon D. Exploring the Facets of Empathy and Pain in Clinical Practice: A Review. *Pain Pract* [Internet]. 2017 Nov 1 [cited 2022 Mar 20];17(8):1089–96. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1111/papr.12563>
28. Cánovas L, Carrascosa AJ, García M, Fernández M, Calvo A, Monsalve V, et al. Impact of Empathy in the Patient-Doctor Relationship on Chronic Pain Relief and Quality of Life: A Prospective Study in Spanish Pain Clinics. *Pain Med* [Internet]. 2018 Jul 1 [cited 2022 Mar 20];19(7):1304–14. Available from: <https://academic.oup.com/painmedicine/article/19/7/1304/3964520>
29. Canale S Del, Louis DZ, Maio V, Wang X, Rossi G, Hojat M, et al. The relationship between physician empathy and disease complications: an empirical study of primary care physicians and their diabetic patients in Parma, Italy. *Acad Med* [Internet]. 2012 [cited 2022 Mar 20];87(9):1243–9. Available from: <https://pubmed.ncbi.nlm.nih.gov/22836852/>
30. Hojat M, Louis DZ, Markham FW, Wender R, Rabinowitz C, Gonnella JS. Physicians' empathy and clinical outcomes for diabetic patients. *Acad Med* [Internet]. 2011 [cited 2022 Mar 20];86(3):359–64. Available from: <https://pubmed.ncbi.nlm.nih.gov/21248604/>
31. McClelland LE, Vogus TJ. Compassion Practices and HCAHPS: Does Rewarding and Supporting Workplace Compassion Influence Patient Perceptions? *Health Serv Res* [Internet]. 2014 Oct 1 [cited 2023 May 22];49(5):1670. Available from: <https://pubmed.ncbi.nlm.nih.gov/2513055/>
32. Menendez ME, Chen NC, Mudgal CS, Jupiter JB, Ring D. Physician Empathy as a Driver of Hand Surgery Patient Satisfaction. *J Hand Surg Am* [Internet]. 2015 Sep 1 [cited 2023 May 22];40(9):1860–1865.e2. Available from: <http://www.jhandsurg.org/article/S0363502315008199/fulltext>
33. Moore PJ, Adler NE, Robertson PA. Medical malpractice: the effect of doctor-patient relations on medical patient perceptions and malpractice intentions. *West J Med* [Internet]. 2000 [cited 2023 May 22];173(4):244. Available from: <https://pubmed.ncbi.nlm.nih.gov/1071103/>
34. Ugeskrift for Læger. Patienter klager mest over kommunikation og opførsel | Ugeskriftet.dk [Internet]. [cited 2023 May 22]. Available from: <https://ugeskriftet.dk/nyhed/patienter-klager-mest-over-kommunikation-og-opfoersel>
35. Cochrane BS, Ritchie D, Lockhard D, Picciano G, King JA, Nelson B. A culture of compassion: How timeless principles of kindness and empathy become powerful tools for confronting today's most pressing healthcare challenges. *Healthc Manag forum* [Internet]. 2019 May 1 [cited 2023 Aug 30];32(3):120–7. Available from: <https://pubmed.ncbi.nlm.nih.gov/31025595/>
36. Lemaire JB, Wallace JE. Burnout among doctors. *BMJ* [Internet]. 2017 Jul 14 [cited 2017 Dec 19];358:j3360. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28710272>
37. De Hert S. Burnout in Healthcare Workers: Prevalence, Impact and Preventative Strategies. *Local Reg Anesth* [Internet]. 2020 [cited 2022 Mar 18];13:171. Available from: <https://pubmed.ncbi.nlm.nih.gov/34257/>
38. Shanafelt T. Burnout in anesthesiology: a call to action. *Anesthesiology* [Internet]. 2011 [cited 2022 Mar 18];114(1):1–2. Available from: <https://pubmed.ncbi.nlm.nih.gov/21139497/>
39. Khamisa N, Oldenburg B, Peltzer K, Ilic D. Work Related Stress, Burnout, Job Satisfaction and General Health of Nurses. *Int J Environ Res Public Health* [Internet]. 2015 Jan 12 [cited 2022 Mar 18];12(1):652. Available from: <https://pubmed.ncbi.nlm.nih.gov/256884/>
40. Yngre Læger. Arbejdsmiljøundersøgelse 2023 Arbejdsrelateret stress og travlhed blandt yngre læger. [cited 2023 Aug 30]; Available from: https://www.laeger.dk/media/holj5ups/arbejdsmiljoe-yl-2023_stress-travlhed.pdf
41. Steenberger A. Over en tredjedel af overlægerne er stressede [Internet]. 2022. Available from: <https://ugeskriftet.dk/nyhed/over-en-tredjedel-af-overlaegerne-er-stressede>

42. NFA. Fakta om Arbejdsmiljø og Helbred 2018 [Internet]. Available from: <https://nfa.dk/-/media/NFA/Arbejdsmiljodata/Fakta-om-Arbejdsmiljo-og-Helbred-2018.ashx?la=da>
43. Gleichgerricht E, Decety J. Empathy in Clinical Practice: How Individual Dispositions, Gender, and Experience Moderate Empathic Concern, Burnout, and Emotional Distress in Physicians. *PLoS One* [Internet]. 2013 Apr 19 [cited 2022 Mar 22];8(4):e61526. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0061526>
44. Garcia CDL, De Abreu LC, Ramos JLS, De Castro CFD, Smiderle FRN, Dos Santos JA, et al. Influence of Burnout on Patient Safety: Systematic Review and Meta-Analysis. *Medicina (B Aires)* [Internet]. 2019 Sep 1 [cited 2022 Mar 18];55(9). Available from: <https://pubmed.ncbi.nlm.nih.gov/36843313/>
45. Rathcke C, Danbjørg DB, Hollmann TK. Organisationer: Sundhedsarbejdernes trivsel er afgørende for patientsikkerhed | læger.dk [Internet]. [cited 2022 Mar 18]. Available from: <https://www.laeger.dk/organisationer-sundhedsarbejdernes-trivsel-er-afgoerende-for-patientsikkerhed>
46. Singer T, Klimecki OM. Empathy and compassion. *Curr Biol* [Internet]. 2014 Sep 22 [cited 2022 Mar 20];24(18):R875–8. Available from: <http://www.cell.com/article/S0960982214007702/fulltext>
47. Wilkinson H, Whittington R, Perry L, Eames C. Examining the relationship between burnout and empathy in healthcare professionals: A systematic review. *Burn Res* [Internet]. 2017 Sep [cited 2017 Dec 19];6:18–29. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/28868237>
48. Shanafelt TD, West C, Zhao X, Novotny P, Kolars J, Habermann T, et al. Relationship Between Increased Personal Well-Being and Enhanced Empathy Among Internal Medicine Residents. [cited 2023 May 22]; Available from: <https://onlinelibrary.wiley.com/doi/10.1111/j.1525-1497.2005.0108.x>
49. Pavlova A, Paine SJ, Sinclair S, O’Callaghan A, Considine NS. Working in value-discrepant environments inhibits clinicians’ ability to provide compassion and reduces well-being: A cross-sectional study. *J Intern Med* [Internet]. 2023 Jun 1 [cited 2024 Dec 30];293(6):704–23. Available from: <https://pubmed.ncbi.nlm.nih.gov/36843313/>
50. Shanafelt TD, Mungo M, Schmitgen J, Storz KA, Reeves D, Hayes SN, et al. Longitudinal Study Evaluating the Association Between Physician Burnout and Changes in Professional Work Effort. *Mayo Clin Proc*. 2016 Apr 1;91(4):422–31.
51. Barsade SG, O’Neill OA. What’s Love Got to Do with It? A Longitudinal Study of the Culture of Companionate Love and Employee and Client Outcomes in a Long-term Care Setting. *Adm Sci Q*. 2014 Dec 8;59(4):551–98.
52. Welp A, Meier LL, Manser T. The interplay between teamwork, clinicians’ emotional exhaustion, and clinician-rated patient safety: A longitudinal study. *Crit Care* [Internet]. 2016 Apr 19 [cited 2023 May 22];20(1):1–10. Available from: <https://link.springer.com/articles/10.1186/s13054-016-1282-9>
53. Sinclair S, McClement S, Raffin-Bouchal S, Hack TF, Hagen NA, McConnell S, et al. Compassion in Health Care: An Empirical Model. *J Pain Symptom Manage* [Internet]. 2016 Feb 1 [cited 2025 Jan 11];51(2):193–203. Available from: <http://www.jpsmjournal.com/article/S0885392415005734/fulltext>
54. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen Burnout Inventory: A new tool for the assessment of burnout.
55. van Berkhout ET, Malouff JM. The efficacy of empathy training: A meta-analysis of randomized controlled trials. *J Couns Psychol*. 2016 Jan 1;63(1):32–41.
56. Batt-Rawden SA, Chisolm MS, Anton B, Flickinger TE. Teaching empathy to medical students: An updated, systematic review. *Acad Med* [Internet]. 2013 [cited 2022 Mar 22];88(8):1171–7. Available from:

- https://journals.lww.com/academicmedicine/Fulltext/2013/08000/Teaching_Empathy_to_Medical_Students__An_Updated,.37.aspx
57. Satterfield JM, Hughes E. Emotion skills training for medical students: a systematic review. *Med Educ* [Internet]. 2007 Oct 1 [cited 2022 Mar 22];41(10):935–41. Available from: <https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2923.2007.02835.x>
 58. Razavi D, Delvaux N, Marchal S, Durieux JF, Farvacques C, Dubus L, et al. Does training increase the use of more emotionally laden words by nurses when talking with cancer patients? A randomised study. *Br J Cancer* [Internet]. 2002 [cited 2022 Mar 22];87(1):1. Available from: </pmc/articles/PMC2364281/>
 59. Gholamzadeh S, Khastavaneh M, Khademian Z, Ghadakpour S. The effects of empathy skills training on nursing students' empathy and attitudes toward elderly people. [cited 2022 Mar 22]; Available from: <https://doi.org/10.1186/s12909-018-1297-9>
 60. Wu LM, Chin CC, Chen CH. Evaluation of a caring education program for Taiwanese nursing students: A quasi-experiment with before and after comparison. *Nurse Educ Today* [Internet]. 2009 Nov [cited 2022 Mar 22];29(8):873–8. Available from: <https://www.meta.org/papers/evaluation-of-a-caring-education-program-for/19505747>
 61. Bas-Sarmiento P, Fernández-Gutiérrez M, Baena-Baños M, Romero-Sánchez JM. Efficacy of empathy training in nursing students: A quasi-experimental study. *Nurse Educ Today*. 2017 Dec 1;59:59–65.
 62. Lown BA. Seven Guiding Commitments: Making the U.S. Healthcare System More Compassionate. *J patient Exp* [Internet]. 2014 Nov 1 [cited 2023 Aug 30];1(2):6–15. Available from: <https://pubmed.ncbi.nlm.nih.gov/28725803/>
 63. Sinclair S, McClement S, Raffin-Bouchal S, Hack TF, Hagen NA, McConnell S, et al. Compassion in Health Care: An Empirical Model. *J Pain Symptom Manage* [Internet]. 2016 Feb 1 [cited 2025 Jan 2];51(2):193–203. Available from: <https://pubmed.ncbi.nlm.nih.gov/26514716/>
 64. Boss H, MacInnis C, Simon R, Jackson J, Lahtinen M, Sinclair S. What role does compassion have on quality care ratings? A regression analysis and validation of the SCQ in emergency department patients. *BMC Emerg Med*. 2024 Jul 18;24(1):124. doi: 10.1186/s12873-024-01040-8. PMID: 39026184; PMCID: PMC11264741.