Lack of Integration of Research in Clinical Practice: A Qualitative Study of Clinical Academics' Challenges in the Workplace Environment of Danish Hospitals

Jensen, Janet; Jensen, Cecilie; Pedersen, Malene; Leth-Larsen, Rikke; Christensen, Marit; Høgsgaard, Ditte

Go to publication entry in University of Southern Denmark's Research Portal

Article

Lack of Integration of Research in Clinical Practice: A Qualitative Study of Clinical Academics' Challenges in the Workplace Environment of Danish Hospitals

Janet Froulund Jensen [1,2,*], Cecilie Froulund Jensen [1,3], Malene Roland Pedersen [2,4], Rikke Leth-Larsen [2], Marit Christensen [5] and Ditte Høgsgaard [2,6]

1   Department of Neurology, Sjaelland University Hospital, Vestermarksvej 11, DK-4000 Roskilde, Denmark; jensenfcecilie@gmail.com
2   Institute of Regional Health Research, University of Southern Denmark, Campusvej 55, DK-5230 Odense M, Denmark; malene.roland.vils.pedersen@rsyd.dk (M.R.P.); rllarsen@health.sdu.dk (R.L.-L.); dmae@regionsjaelland.dk (D.H.)
3   The Department of Sociology and Criminology, University of Arkansas, Old Main, 211, 416 N Campus Walk, Fayetteville, AR 72701, USA
4   Department of Radiology, Vejle Hospital, DK-7100 Vejle, Denmark
5   Department of Psychology, Norwegian University of Science and Technology (NTNU), 7034 Trondheim, Norway; marit.christensen@ntnu.no
6   The Research and Implementation Unit PROgrez, Department of Physiotherapy and Occupational Therapy, Naestved-Slagelse-Ringsted Hospitals, DK-4200 Slagelse, Denmark
*   Correspondence: jfje@regionsjaelland.dk; Tel.: +45-26813406

Abstract: Clinical academics experience dual workplaces, namely the clinical and the research environment. However, working in two workplaces leads to difficulties in forming an integrated identity, affecting a person's work environment and well-being. The aim was to explore how clinical academics experience the psychosocial work environment and their suggestions for improving and changing work well-being. A multicenter qualitative approach with group interviews inspired by participatory action design was used. A purposeful criterion sampling strategy was used, selecting researchers affiliated with the university's research network (n = 12). Data were analyzed by thematic analysis and the consolidated criteria for reporting qualitative research was applied. The main finding, 'lack of integration of research in clinical practice', revealed how clinical academics balanced between the two practices, how their need for belonging in both work environments was established by fellowship, and how motivational factors and role models could be enhanced through a joint commitment of responsibility in research units and clinical practice. This study provides a contemporary understanding of the challenges that mainly Ph.D. students encounter and what solutions they would offer. This study adds to knowledge on well-being in psychological work and provides solutions on how clinical academic Ph.D. students can achieve the integration of research in clinical practice.

Keywords: well-being; psychosocial; work environment; clinical academics; participatory action research

1. Introduction

The demand for healthcare services is increasing. The reasons comprise the global aging population and more advanced treatments, which result in improved survival rates, but survival often leaves people with sequelae. These factors, along with advancements in technology and knowledge, have increased the need for expertise in the medical field [1–3]. Consequently, there has been global advocacy for clinical academic positions for healthcare professionals due to their positive impact on care quality and their role in supporting recruitment and retention [4,5]. Clinical academics (CAs) can be described as individuals with any health professional background who work in both clinical and research or educational roles that play a key part in the healthcare and academic workforce with a clinical

and work environment [4]. CAs have any background, and their research and teaching commitments are dependent on various individual factors, as well as the systems in which they operate [4]. The Physician-Scientist Workforce Working Group Report [6] details the unique perspective of physician-scientists, which involves a two-way process where clinical observations can be translated into research and the findings can be implemented in care [6,7]. CAs often work on short-term contracts, develop as independent researchers, apply for funding, navigate a competitive environment, and aim to increase their research publication output [8–10]. In Denmark, CAs often base their research projects on clinical problems. This focus is encouraged by the prioritization of clinical projects supported by public funding [11]. Moreover, Denmark has politically prioritized increasing the number of shared positions between research and clinical work, and clinical work takes precedence in the healthcare system, where clinical work may in periods give way for research [11,12].

Well-being is a positive state experienced by individuals and societies [13,14]. Well-being includes quality of life and the ability of people and societies to contribute to the world with a sense of meaning and purpose [14]. Well-being at work can be considered as the psychosocial work environment combining health, safety, and well-being concerns including the organization of work and workplace culture [14]. In a medical context, well-being refers to a positive state where individuals can reach their full potential, covering areas like psychosocial health and professional fulfillment [15,16]. Professional fulfillment refers to positive rewards resulting from work that aligns with individual career ambitions [17]. CAs' work environment at hospitals is complex in terms of workload, individual responsibility, pressure due to a lack of time, and the scarcity of human resources [18,19]. This can result in stress and burnout among physicians, leading to career and job dissatisfaction and profession changes [15,20]. Occupational stress is also reported to be high in academia [21]. A good working environment leads to high-quality patient care [19,22], influences work performance, and leads to retention, health disparities, and care delivery [23–26]. A good and healthy work environment is influenced by knowledgeable management, collaboration amongst colleagues, good physical conditions, and psychological well-being (e.g., flexibility and autonomy) [27,28]. The psychosocial work environment has been used in different job strain models (e.g., the job demands–resources and self-determination theory) to explain why psychosocial factors and resources might lead to negative (e.g., stress, dissatisfaction, and burnout) and positive outcomes (e.g., engagement, motivation, and commitment) [29–31].

The majority of existing research on work well-being has used standardized measurement instruments for quantifying work well-being, satisfaction, burnout, and stress, which can limit the depth of understanding of work well-being [6,7,10,15,23,24,26,28]. The reliance on pre-determined questions may overlook critical aspects of work well-being that are most relevant to participants. Furthermore, these traditional approaches do not always uncover the complexity of the challenges faced by professionals or the innovative solutions they might propose based on their experiences. Most studies investigate professions separately [15,32,33] or focus on students' or residents' learning in medical education [34]. No study has investigated how we can understand and improve the work environment at different medical organizations' research training in a clinical context with a variation of CA professions. To our knowledge, no studies have actively involved participants in identifying and addressing their key challenges, hence uncovering insights that might be missed by standard quantitative methods. Hereby, we have a limited understanding of the CAs' work environment and their suggestions for improving work well-being, as seen from an individual's perspective. This approach not only provides a richer understanding of the issues at hand but also empowers participants by valuing their expertise and experiences [35,36]. Addressing this gap is crucial, as it could lead to more effective interventions and policies that directly address the real concerns and needs of professionals, ultimately enhancing work well-being in meaningful ways. By shifting the focus from merely quantifying well-being to actively involving participants in problem-solving, this study has the potential to contribute significantly to both the academic literature and prac-

tical applications in workplace well-being programs. The study aimed to explore clinical academics' experience of the psychosocial work environment and their suggestions for changing work well-being, inspired by participatory action design using group interviews.

2. Materials and Methods

2.1. Design

The study used a qualitative approach with virtual focus group discussions inspired by participatory action design [35,36]. The consolidated criteria for reporting qualitative research (COREQ) was applied [37]. Participatory action design encouraged participants to emphasize their solutions based on their problems and challenges experienced as CAs in different hospital settings [38]. Participatory action design was based on participants submitting issues of importance and participating in focus group discussions. These discussions included challenges and achievable solutions. It reinforced critical dialogue about their experiences of work well-being [35,36]. The overall design is detailed in Figure 1.
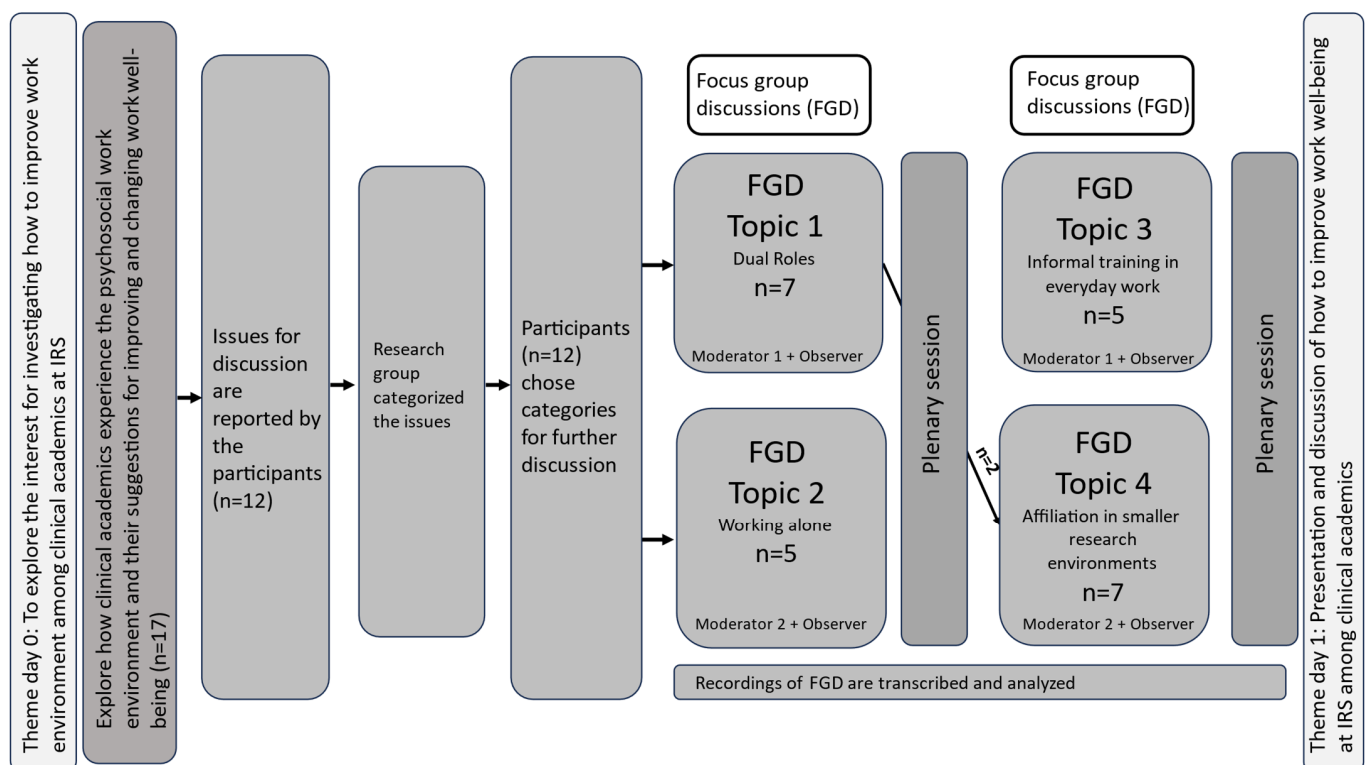
Figure 1. Overall design.

2.2. Setting and Participants

The participants of the study, as well as four of the authors, were researchers associated with the University of Southern Denmark (SDU) at the Institute for Regional Health Research (IRS). The IRS is a network of health research environments and educational activities anchored at SDU, covering 12 different hospital settings in the regions of southern Denmark, Zealand, and the Capital Region of Denmark. Therefore, researchers at the IRS are dually affiliated with SDU and clinical departments at different hospitals. The IRS network of young researchers consists of Ph.D. students (n = 110), postdoctoral researchers (n = 15), and adjuncts (n = 5). They were all invited to participate via email by a secretary. A purposeful criterion sampling strategy was used based on participants' affiliation to the IRS to capture the experiences of researchers' dual affiliation and to explore solutions to improve work well-being [39]. In total, 17 researchers volunteered to participate in the study; however, some were absent due to unexpected work (n = 5), leaving the final sample with 12 participants, as shown in Figure 1. We intended to choose participants based on the concept of informational

power rather than data saturation [40]. Even though participants seemed heterogeneous with different professions and research training, they were homogeneous due to having the same work conditions affiliated with the IRS at different hospitals. Moreover, participants were expected to contribute with deep, meaningful data that directly support the research aim regarding the psychosocial work environment and work well-being [40,41].

2.3. Procedures

The week before the focus group interviews, participants were asked by mail to elaborate on issues related to 'What is important for you to thrive in your work-life environment?' and 'What is important for you to thrive in your working relationships?'. These two questions were identified on theme day 0, held by the IRS before the study was initiated, as shown in Figure 1. Participants submitted 15 daily challenges by email which could be discussed in the group interviews [42]. These challenges were organized into topics by four of the authors and one consultant, as seen in Table 1. Participants selected the four topics in four focus group discussions which they found most crucial for further discussions. These were (1) dual roles; (2) working alone; (3) informal training in everyday work; and (4) affiliation in smaller research environments. After each focus group discussion, a plenary session with all participants, four of the authors, and one consultant was conducted to summarize the findings from each focus group discussion [42,43]. The interview guide consisted of two 'grand tour' questions, covering 'What is the problem?' and 'How can it be resolved?'. All four focus group interviews were audio recorded, transcribed, and used for the analysis. The interview lasted for 45 min (range 42–47 min).

Table 1. Development of the interview guide.

Submitted Issues from Participants	Organized Clustered Topics by Researchers	Selected Topics for Discussion by Participants	Interview Questions
Motivation Work–life balance	Dual roles		
Loneliness Working from home versus working at the office (pros and cons) Structuring administrative tasks, emails, and research tasks	Working alone		
Terms of employment (part time/temporary employment) Insecurities toward future employment	Employment conditions	(1) Dual roles (2) Working alone (3) Informal training in everyday work (4) Affiliation in smaller research environments.	What is the problem? How can it be resolved?
Collaboration Cooperation Missing/lack of recognition Colleagueship	Informal training in everyday work		
Competitive environment Sharing knowledge The chemistry between the main supervisor and Ph.D. student New employees' experiences of inclusion in the research environment	Affiliation in smaller research environments		

On the subsequent theme day at the Institute for Regional Health Research, suggestions and actions were discussed to improve work well-being in practice, as shown in Figure 1. Data from the two theme days were not included in this study.

2.4. Data Analysis

Each group discussion was facilitated by an experienced moderator (the first or last author) accompanied by an observer (a consultant or the third author). The moderator and observer took notes during the interviews. All data were analyzed using a qualitative thematic analysis, which identifies, analyzes, and reports themes within the qualitative data [43]. The analysis followed a six-step process of familiarization, generating initial codes, searching for themes,

reviewing themes, defining and naming themes, and producing the report [43]. In the process, we used collaboration between several researchers with different backgrounds (i.e., 'researcher triangulation') for mutual discussions [41]. Before coding began, the transcripts were thoroughly read multiple times, with JFJ and DH independently taking notes and generating ideas for coding. Two researchers, JFJ and DH, collaboratively coded the data and performed the initial analysis. This initial analysis was then discussed among the research team to reach a consensus. The themes were continuously adjusted through reflective processes during the research to enhance the study's trustworthiness [41]. Quotes are chosen as illustrative examples and presented in the Supplementary Materials to provide transparency [43]. A theme is identified as something significant about the data concerning how the work environment can support work well-being and possible solutions [43]. A theme symbolizes a patterned response or meaning within the data set [43]. Audio recordings of the interviews were transcribed and verified by one author (CFJ). Three authors completed the final thematic analysis (JFJ, CFJ, and DH). Finally, the themes were named in the ongoing analysis of each theme and their relation to the study's overall story. The data were analyzed using Excel (2017) software [44,45].

2.5. Rigor

Reflexivity involves a critical reflection on the researcher's impact while gathering information throughout the research process [41,46]. In the process, we used researcher triangulation to discuss the interview guide during the analysis and discussion to supplement or contest quotations and statements. Transferability was achieved through detailed descriptions, dependability by including participants' quotes, and transparency by outlining the processes of sampling, data collection, and analysis [41,47]. The research team was multidisciplinary, comprising experts with diverse qualitative and quantitative research experience, including experience within teaching and different clinical areas. Reflexivity was secured during the interviews, as participants were asked to elaborate their statements, both to ensure a common understanding and to achieve a detailed representation of the phenomenon. The authors' interest in researching the work environment was due to the assumption that our work environment influences our performance, and how the psychosocial work environment could be improved. Only one author (MC) had experience in the research field of psychosocial work environment, which enhanced the analytical process with openness and curiosity from the rest of the research team. The interview style was proved to be appropriate to describe the phenomena and related problem fields. The interviewees were very amicable and open regarding their experiences.

2.6. Ethical Approvals

The Helsinki Declaration was followed, and participants were included after oral and written informed consent had been obtained. The study was presented to the National Committee on Health Research Ethics, and according to Danish law, no formal approval was needed (J. no EMN-2023-02212). The local ethical committee at the hospital and relevant hospital and department managers approved the study protocol (EMN-2023-04115). Participants were informed that participating in this study was confidential and did not have any influence on their work or terms of employment.

3. Results

3.1. Participant Characteristics

Participants were affiliated with five hospitals located in the southern region of Denmark. This included two adjuncts, one associate professor, and nine Ph.D. students, five male and seven female, all aged 29–62 (mean of 38.58 years) with current employment in the department between 6 and 140 months (mean of 39.08). Most participants were Ph.D. students (n = 9) and a few were senior researchers (n = 3). All had combined positions between research and clinical work (n = 10) or between research and teaching (n = 2), as shown in Table 2. All participants primarily worked in research, although nine were officially employed 20–50% in clinical practice. All participants had various clinical responsibilities, which included teaching staff, working on development projects, writing local clinical guidelines, engaging in patient

safety and quality improvement work, and interacting directly with patients and their relatives. Physicians, compared to other professionals, had more frequent interactions with patients and their relatives at the bedside. Only three participants were permanently employed at the hospital, one of whom was employed part-time.

Table 2. Participants' characteristics.

Participants (P#) [1]	Age (Years)	Sex	Education	Department	Position	Focus Group (#)		Employed [2] (Months)
P1	33	Male	Physician	Internal Medical (lung diseases)	Ph.D. student	1	3	36
P2	53	Female	Nurse	Trauma and Emergency + Orthopedic Surgery	Adjunct + Research leader	2	4	48
P3	30	Female	Nurse	Neurology	Ph.D. student	2	4	15
P4	29	Male	Physician	Neurology	Ph.D. student	2	4	6
P5	39	Male	Physician	Medical, Gastroenterology	Ph.D. student	1	3	15
P6	62	Male	Nurse	Psychiatry	Adjunct	1	3	108
P7	31	Female	Pharmacist	Radiology	Ph.D. student	1	4	14
P8	44	Female	Radiographer	Radiology	Associated professor + Research leader	1	4	140
P9	32	Female	Physician	Spinal Cord Medicine	Ph.D. student	2	4	24
P10	36	Female	Physician	Oncology	Ph.D. student	1	3	25
P11	38	Female	Physician	Environmental Medicine	Ph.D. student	2	4	24
P12	36	Male	Physician	Organ Surgery	Ph.D. student	1	3	14

[1] All participants were dual affiliated to the university and the hospital. [2] Employed in the same hospital department.

3.2. Main Theme: Lack of Integration of Research in Clinical Practice

The main theme structured the meaning of CAs' well-being in their psychosocial work environment and their suggestions for change. This was 'Lack of integration of research in clinical practice'. It emerged after identifying the following three themes: (I) 'The fine line between research and clinical practice'; (II) 'A wish to belong; and (III) 'The impact of motivational factors and role models'. The analytical process is abstracted in Figure 2 and selected quotations are presented in the Supplementary Materials in Table S1.
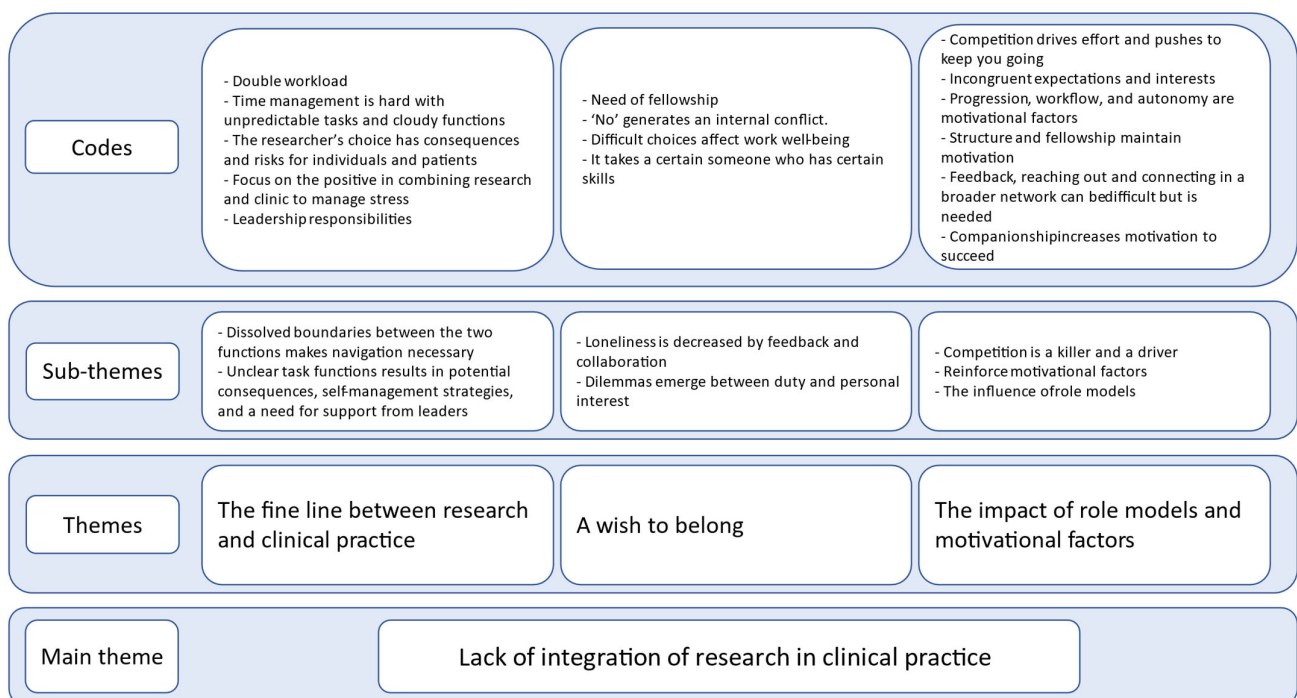
Figure 2. Analytical process.

3.3. Theme I: The Fine Line between Research and Clinical Practice

All participants spoke of a vision that clinical work and research should complement each other. The participants assumed their colleagues considered research in clinical practice the same way. However, all participants experienced being stuck between the consideration for clinical- and patient-related work and the consideration for progressing their research projects. The feeling of being caught in both positions was reinforced by expectations from both positions to perform at 110%. A few participants, who were Ph.D. students, were concerned about missing a new procedure or guideline, which could potentially harm patients and result in legal complaints. Most participants experience being in a double role, where the role as a clinician is led by the concern for patient care. Senior researchers had the same experience. In contrast, their role as researchers is driven by the need to continuously advance in both research, publications, and other academic tasks. Participants' challenges were about the time required for research, as patient care and clinical tasks often are acute, and will be prioritized. Some expressed that research was consumed by clinical tasks and an obligation toward timely quality patient care, which was driven by their consciousness. Some participants (Ph.D. students and one senior researcher) spoke of the importance of having dedicated time for both positions and being strict with their time to fulfill each function.

All participants believed the delegation of time for research should be a manager's and research leader's responsibility. It can be stressed that the department management might not always have a full overview of all the details of the research projects; however, acceptance and support from both the research and department management is equally important. In addition to time delegation, boundaries between functions and the associated tasks and roles were also unclear. This made the navigation between the two professional roles difficult. All Ph.D. students spoke of the unclear content of functions, tasks, and time structure, which were areas that added to the burden of research in clinical practice and pushed research to be secondary. Ph.D. students experienced structuring their work life as a challenge that requires special attention due to unclear roles and content. Some stated that several of the challenges they experienced could be resolved by having a guide of the daily work, with updates on crucial changes in patients' guidelines, but also having a journal of guidelines in the department. Most Ph.D. students highlighted that structure in a written journal allows for an overview with clear task delegation. Additionally, it allows for an overview of the clinical tasks, for example, when test results are available for check-ups in clinical work. It is a motivational factor for all participants to have management's visible support and recognition.

3.4. Theme II: A Wish to Belong

It was essential for all participants to feel a sense of belonging in both working environments. Senior researchers were more attentive toward Ph.D. students' social relationships and feelings of well-being. Conducting research can be lonely and is dependent on collaboration, networks, and social relationships to succeed. Ph.D. students felt alone in research on two levels; on the physical level by having single offices or working from home and on the research level in individual projects due to having different research areas compared to other researchers in the research unit. All senior researchers acknowledged the importance of being connected to a research group to develop as a researcher.

All participants spoke of being visible as a significant factor in clinical practice, such as including the departments' staff in the current research projects. It permits a sense that a researcher is not remote, but rather one who is carrying out research in clinical practice. It encouraged a sense of community beyond patient care, allowing us to celebrate research victories together. Ph.D. students elaborated on having clinical obligations in addition to research as stressful, but some also considered it as a break with the opportunity to be a part of a broader fellowship. All participants appreciated being affiliated with clinical practice, as it was a place to have casual chats, involve staff in research, and join the fellowship. Being a part of the clinical fellowship was enhanced by physical presence,

which allowed for the sharing of knowledge. Others used face-to-face contact with their professor or research colleagues in a more formal approach to creating fellowship. The need for fellowship, along with their responsibility in clinical practice, generated a struggle to say no to their colleagues or other health professionals. Ph.D. students doubted their double role, questioning whether they belonged more to the world of clinical practice or the domain of research. It created an inner conflict for Ph.D. students between their clinical duty with a fellowship and their personal interest to progress with research projects. This leads to an experience of putting your own needs aside to strengthen your research, which will benefit the overall research unit. It requires a unique kind of person with high self-discipline and a focus on progression in research. Sometimes, all participants had to accept that not everything is manageable within the timeframe or resources they have.

3.5. Theme III: The Impact of Motivational Factors and Role Models

Competition is a premise of research. Ph.D. students spoke of the competitive aspect that affects the priority of themes within the research unit based on the head of the research unit and/or supervisors' interests. The focus on specific topics of research influences the opportunities for funding applications and how much attention the topic gets within and outside the research unit, including how much information staff receive about present research activities. The expectations and ambitions in the research unit are to be the first to publish in high-impact journals. Both clinicians and research supervisors have expectations, which can be incongruent in terms of how Ph.D. students should prioritize their time and tasks. Contrastingly, some Ph.D. students experienced having zero expectations due to repeated neglect from either the research unit or the clinical practice.

Ph.D. students expressed being simultaneously responsible for creating progress and flow in the research, which allows for great job satisfaction when successful. However, it is also emphasized that Ph.D. students must set clear and realistic goals in their daily workload and avoid procrastination. Clinical work can be a legitimate way to procrastinate, which in turn disturbs the expected progress of the research. Academic feedback supported young as well as senior researchers to grow. However, senior researchers who were supervisors had a dual role in both assisting young researchers and seeking out support in their network. Participants who were also supervisors experienced an additional responsibility to support others. Few Ph.D. students spoke of their relationship with their supervisor as a parent/child or as an apprenticeship. The learning process of Ph.D. students was influenced by the support of the supervisor and the surrounding environment. Senior researchers also mentioned network feedback as necessary for moving forward in their projects. Many participants, both Ph.D. students and senior researchers, found academic feedback outside their research unit due to two reasons. Either the research unit was too small or there was a lack of confidence to be safe in the fellowship within the unit. That way, they have people around them who they trust and feel safe enough to ask even the most obvious questions. For senior researchers, it was all about having unprejudiced and constructive feedback in the research environment.

Some participants, both Ph.D. students and senior researchers, experienced a lack of joint commitment and a sense of responsibility toward each other. One of the solutions was doing activities together to enhance a sense of responsibility. Activities could be going on a walk or eating lunch with both researchers and clinicians. All participants pointed out that it would be obvious to make a network across research units, preferably virtual and in close association with the current research unit. Some also had a great experience with joint research meetings, which offered a shared space that is necessary to create and cultivate relationships across research areas and hospitals. All participants need to have versatility in their social circle, people to rely on for help, and a place to talk about things that take up a lot of space mentally.

3.6. Solutions for Changing Work Well-Being

The participants offered several suggestions for improving work well-being, which were linked across themes concerning time management, role clarity, and supportive environments. These suggestions covered various types of support (e.g., instrumental, appraisal, organizational, or social support).

Ph.D. students emphasized the importance of allocating dedicated time for both research and clinical duties. They suggested being strict with time management to ensure each role is adequately fulfilled. The prerequisite for allocating dedicated time was the acceptance and support from management leaders. Ph.D. students highlighted the need for clear boundaries between tasks and roles. A few Ph.D. students suggested a description of the role with operating instructions and clear expectations of the dual role position, preferably in collaboration with their management's leaders. Ph.D. students strongly believed that a role description like this would alleviate their bad consciousness about their time consumption, alleviate conflicts by saying no, and reduce stress. Ph.D. students suggested the creation of a daily work guide and a departmental journal. These tools would provide updated information on patient guidelines and task delegation, offering a clear structure that helps in navigating clinical and research responsibilities. A written overview of clinical tasks, such as test result availability, would help streamline responsibilities and reduce the cognitive load on Ph.D. students.

To increase the amount of academic feedback, which was essential for growth, young as well as senior researchers needed support both from within and outside their network. A joint research network could increase all participants' learning opportunities. Ph.D. students suggested creating cross-unit networks, preferably virtual, to promote relationships and provide support. Joint research meetings were also recommended as a means of cultivating relationships across different research areas and hospitals. Senior researchers also sought unprejudiced and constructive feedback from trusted colleagues outside their immediate research unit. Senior researchers recommended all participants have diversity in their support networks, which could help improve the overall work well-being. Ph.D. students suggested accommodating a stronger sense of community among researchers and clinicians by engaging in shared activities, like walks or lunches. However, all participants acknowledged the value of having a shared position between research and clinical practice because it encouraged a sense of community beyond patient care and made research easier in clinical practice on many levels.

By implementing these solutions, participants believed that work well-being could be significantly improved, leading to a more balanced and fulfilling professional life.

4. Discussion

This qualitative study explored how the work environment can support work well-being among CAs and their suggestions for changes. We demonstrated how researchers in clinical practice struggled with promoting and inhibiting aspects of their jobs that affected their work well-being. The main finding, which involved a 'lack of integration of research in clinical practice', describes how researchers balanced between research obligations and clinical responsibilities; their need for belonging in both work environments is established by a fellowship; and how motivational factors and role models should be enhanced through a joint commitment of responsibility in research units and clinical practice. The participants' suggestions for change were linked across themes. It concerned having tools to manage time, role clarity, and supportive environments. Being nearby and visible in clinical practice enhanced the sense of belonging, and having academic feedback was essential to growth for both Ph.D. students and senior researchers. Creating relationships across professional roles, research areas, and hospitals was important for having the option of academic feedback and guidance.

The main finding of a 'Lack of clinical research training in clinical practice' describes how CAs experienced work well-being regardless of their level of research training, professions, or clinical settings/contexts. The intention of employing clinical academics in

part-time shared positions between hospitals and universities is to increase care quality and improve recruitment and retention at hospitals [4,48,49]. Different medical organizations place training as an obligation of professional practice, but research could also be considered a bridge between theoretical knowledge and practical application. Improvement in clinical practice and education is based on research results; research informs education and vice versa, and clinical practice assists in developing future clinician–researchers [50]. Even though participants found challenges in their work environment associated with their work well-being, they also found opportunities to improve it. It is possible that the lack of integration is due to a lack of a defined consensus of competencies for CAs with shared positions at hospitals [25] or due to the integration of research training being poorly defined by hospital managers, as found during a Ph.D. program by Ng and colleagues (2019) [51]. A significant investment in joint CA positions has been made to bridge the gap between academia and the clinical field [12,48]. The lack of integration might be explained by findings from the systematic review [4] evaluating interventions intended to increase recruitment, retention, and career progression within CA careers [4]. These findings indicated the benefits of supportive relationships for CAs, including peer and senior mentors [4]. Educational supervision and feedback were described as essential to growth, but participants' experiences indicated it was difficult and sometimes unstructured in clinical practice due to blurred or double expectations from both the clinical and the research parts. This gave Ph.D. students a feeling of conflict when they declined a task. This is in line with Birkeli et al. (2023), who found educational supervision to be unclear with an undefined supervisor role in clinical practice, which was associated with multiple and contradictory expectations [34].

The lack of integration is not new between the clinical and academic worlds and has been called the 'theory-practice gap' within the nursing literature [48,52]. Support from leadership for participating in research activities is essential if research-based nursing care is to succeed [53]. Success is determined by clear expectations, roles, and how to integrate CAs among the staff to avoid competition, isolation, and the blurring of roles [53]. Blurred roles also affected participants' work well-being in this study, which matches a qualitative study with senior researchers (n = 13) [54]. Trusson and Rowley (2022) described difficulties in making the role of the CA clear and hence adjusted expectations from colleagues [54]. Participants described the work environment in two different cultures where direct patient care is a priority for clinical staff and manager leaders, hence implying that research is not [54]. Another similar qualitative study (n = 14) indicated that these issues arise from CA nurses feeling under-appreciated and were victims of negative reactions from the clinical team [55]. In this study, the priority on patient care was experienced by physicians as well as nurses. The solution from participants in this study was a higher degree of leadership support, as found by others [56]. Oostveen et al. (2017) suggest that leaders' lack of commitment may stem from a lack of a clear vision and mission at the strategic level [55]. Additionally, nursing directors should take a frontline role in promoting CAs' work [55]. However, managers and directors reported personally inadequate academic knowledge and competencies for integrating clinical and academic work [55]. To achieve a higher degree of integration of clinical and academic work, leaders also need clear roles, expectations, and content for the individual employee [53]. Additionally, mentoring, peer support, and role models aid in academic skills and establishing an academic identity [57,58]. Moreover, according to the job demands–resources theory, resources can serve as a buffer between job demands and strain [30]. Resources such as social support, performance feedback, and development opportunities can diminish the experience of job demand and aid the individual in managing job demands better [30]. This shows the importance of adding resources to increase resilience and improve well-being.

A significant barrier for CAs was having dedicated time, particularly to moderate the negative impact of competing clinical demands and research-related activity for all CAs, which aligns with other studies [4,52]. According to Raine et al. (2021), committed and experienced program staff were key facilitators of success [4], which is related to the

solutions suggested in this study. It is possible that interventions to integrate research in clinical practice successfully should add supportive relationships for CAs, secure dedicated time for research in clinical practice, and enroll committed and experienced program staff in future studies. This might increase work well-being and also have a positive effect on the recruitment and retention of CA careers, as highlighted by others [4]. However, protected time for research in clinical practice is somewhat controversial because clinical work has been politically stated to have superiority in the healthcare system and there is a public funding prioritization for clinical projects [11,12]. In light of these findings and the political agenda of increasing the number of shared positions between research and clinical work [11], there are indications to define the role and expectations of shared CA positions for Ph.D. students and senior researchers, including the role as supervisors, on an organizational and political level.

Participants' suggestions included structuring everyday work life, having academic feedback, being a part of a network, doing activities together, and having a clear functional description with operating instructions. Some of these suggestions are simple, low-cost suggestions that can be incorporated into future interventions. Some of these suggestions can be explained within the self-determination theory [31]. The self-determination theory focuses on the effect of social contextual factors on human motivation, behavior, and personality [31]. The self-determination theory can be used to understand how to support people's motivation at work [31]. Some of the findings can be explained by the self-determination theory and show how to facilitate extrinsic rewards for the participants' motivation. In the self-determination theory, there are three crucial psychological needs equally central to optimizing development, functioning, and increasing well-being [31]. These needs are competence, autonomy, and relatedness, and can help explain our findings [31]. Competencies can be related to the fine line between clinical and research practice, autonomy as the impact of motivational factors and role models, and relatedness in terms of the theme of a wish to belong. According to the World Health Organization (2010), managing mental health at work offers an opportunity for growth and sustainable development [14]. Future studies are recommended to investigate some of the suggestions the participants pointed out as a base for interventional frameworks. These interventions can be seen from the multilevel perspective of an integrated approach like the individual, group, leader, organizational, and overarching context model (IGLOO) [59,60]. The interventions should incorporate the psychological needs from the self-determination theory and address demands and resources seen from the job demands–resources theory [30,31] to ensure effective prevention, promotion, and support for mental health at work [14]. The next step of this study is to develop implementation strategies based on participants' suggestions for change at various levels within the organization (e.g., within the IGLOO framework). Another important unanswered question is the psychosocial work environment experienced by senior CAs, including professors. A future examination that includes senior CAs would bring another perspective and provide insight into issues and solutions regarding their work environment.

Methodological Considerations

This is one of the few studies that used participatory design to explore how the work environment can support work well-being among CAs and their suggestions for changes. However, the findings that emerged were based on a sample of Ph.D. students and a few senior researchers. We tried to prevent an uneven seniority presentation and a small sample size by having a theme day before this study to explore the interest in improving work well-being. But it was uncontrollable with volunteer-based participation. Additionally, while this study involved a selected group of an affiliated diverse group of CAs from different hospital settings with varying experience, these individuals do not represent all CAs from their hospitals because participants were mostly Ph.D. students. However, the study included 12 participants and found adequate informational power, thereby achieving data saturation [40]. We could have recruited participants from the IRS' 'theme day 0'

and conducted the interviews outside normal working hours or in a continuation of the annual seminar held at the IRS. However, this might have decreased the sample size and affected the analysis and data transformation. When considering the transferability of interpretations and conclusions, the chosen sampling method aimed to include information-rich cases that strongly represent the phenomenon without being outliers. This approach was intended to capture the essence of typical experiences and ensure quality [39]. It is debatable whether the selected participants truly represented a balanced sample or if they were too extreme or atypical, given that all of them had experience with work well-being in dual roles. However, this study does not account for the full scope of variation across different clinical settings, as the complexity and specific challenges of each work environment were not uniformly evaluated or controlled for.

It is important to acknowledge the methodological limitations of conducting research within a familiar context. The authors (n = 4) were also affiliated with the IRS and they were familiar with some of the interviewees. While familiarity with the context facilitated access to the field and encouraged participants to share their experiences more openly, it may also have influenced the creation of research questions, the development of the interview guide, and the analysis process. To reduce potential investigator bias, we employed an external researcher, a consultant, and a research assistant to collect data, transcribe, and analyze the interviews. Trustworthiness was also increased during the interviews by the interviewer, who sought to clarify, understand, and expand the information provided. The credibility and trustworthiness of our findings were increased by adapting well-established research methods and by investigator triangulation [41,47]. The findings emerged from participants also employed at different hospitals and provided equivalent results as other studies, which increased the transferability of our findings. However, the cultural aspects must be considered, as contextual characteristics differ among research environments and professions. This does reduce the external validity and the transferability of our study to the medical field at the hospital level, particularly among Ph.D. students. No studies, to our knowledge, have explored the work environment of CAs, including which factors are changeable to improve their work well-being. One major strength of this study is the triangulation of methods, combining elements from participatory action design with interview techniques [41,47]. This method actively engaged participants in selecting the issues and allowed participants to voice their own opinions on solutions and even solutions in their specific workplace to increase their work well-being [35]. Lastly, authors openly discussed their predispositions to maintain objectivity during the analysis and interpretation [41,47].

5. Conclusions

This study provides a contemporary understanding of the challenges that clinical academics encounter and what solutions they would offer. These findings should be emphasized to mainly cover the experiences of Ph.D. students at the hospital level. These findings could guide the development of future interventions based on participants' suggestions for change at different levels within the organization. A lack of integration of research in clinical practice affected Ph.D. students' work well-being differently depending on their specific context. To accomplish integration, several issues must be addressed at different levels as follows: (1) the overarching level with a clear CA work-related national policy; (2) the organizational level with a clear vision and mission; (3) the leaders' level with the support of management and leaders, with clear expectations, defined roles, and plans for the integration of CAs within the staff; (4) the group and relational level by creating peer, mentor, and network support; and (5) the individual level to help structure everyday work and secure work–life balance. Addressing some of the many solutions suggested to change the work environment might increase work well-being and simultaneously improve retention and reduce sick leave and long-term stress to benefit both patients and the healthcare system, as well as enhance care delivery.

References

1. Lee, J.; Dowd, B. Effect of health information technology expenditure on patient level cost. *Healthc. Inform. Res.* **2013**, *19*, 215–221. [CrossRef] [PubMed]
2. Meyer, R.; Degoulet, P.; Omnes, L. Impact of health care information technology on hospital productivity growth: A survey in 17 acute university hospitals. *Stud. Health Technol. Inform.* **2007**, *129 Pt 1*, 203–207.
3. Elgaard Sorensen, E.; Hoffmann Kusk, K.; Athlin, A.M.; Lode, K.; Rustoen, T.; Salmela, S.; Holge-Hazelton, B. The role of PhD-prepared, hospital-based nurses: An inter-Nordic study. *J. Res. Nurs.* **2019**, *24*, 470–485. [CrossRef] [PubMed]
4. Raine, G.; Evans, C.; Uphoff, E.P.; Brown, J.V.E.; Crampton, P.E.S.; Kehoe, A.; Stewart, L.A.; Finn, G.M.; Morgan, J.E. Strengthening the clinical academic pathway: A systematic review of interventions to support clinical academic careers for doctors and dentists. *BMJ Open* **2022**, *12*, e060281. [CrossRef]
5. Aspinall, C.; Slark, J.; Parr, J.; Pene, B.J.; Gott, M. The role of healthcare leaders in implementing equitable clinical academic pathways for nurses: An integrative review. *J. Adv. Nurs.* **2024**, *80*, 3119–3133. [CrossRef]
6. Feldman, A.M. The National Institutes of Health Physician-Scientist Workforce Working Group report: A roadmap for preserving the physician-scientist. *Clin. Transl. Sci.* **2014**, *7*, 289–290. [CrossRef] [PubMed]
7. National Institutes of Health. *Physician-Scientist Workforce Working Group Report, 2014*; National Institutes of Health: Bethesda, MD, USA, 2021.
8. Chatzea, V.-E.; Mechili, E.A.; Melidoniotis, E.; Petrougaki, E.; Nikiforidis, G.; Argyriadis, A.; Sifaki-Pistolla, D. Recommendations for young researchers on how to better advance their scientific career: A systematic review. *Popul. Med.* **2022**, *4*, 24. [CrossRef]
9. Bazeley, P. Defining 'Early Career' in Research. *High. Educ.* **2003**, *45*, 257–279. [CrossRef]
10. Hermann, K.J.; Wichmann-Hansen, G.; Jensen, T.K. *Quality in Ph.D. Courses [Kvalitet i ph.d.-forløb]*; Aarhus University: Aarhus, Denmark, 2014; pp. 1–144.
11. Ministry of Health. *Recommandations to Strenghen Clinical Research in Denmark [Anbefaliner til at Styrke den Kliniske Forskning i Danmark]*; Ministry of Health: Copenhagen, Denmark, 2023.
12. Ministry of Health. *The Government Is Launching Several Initiatives in the Emergency Plan for the Healthcare System [Regeringen Lancerer Flere Initiativer i Akutplan for Sundhedsvæsenet]*; Ministry of Health: Copenhagen, Denmark, 2023; pp. 1–2.
13. Ratih Devi, A.; Erita Yuliasesti Diah, S.; Herlina Siwi, W. A Literature Review of Workplace Well-Being. In Proceedings of the International Conference on Community Development (ICCD 2020), Ho Chi Minh City, Vietnam, 20 October 2020; Atlantis Press: Paris, France, 2020; pp. 605–609.

14. World Health Organization; Burton, J. *WHO Healthy Workplace Framework and Model: Background and Supporting Literature and Practices*; World Health Organization: Geneva, Switzerland, 2010.

15. Hodge, E.; Sandford, A. Workforce nurturing: An approach to improving wellbeing, burnout and professional fulfilment among Australian doctors. *Int. J. Med. Educ.* **2024**, *15*, 59–65. [CrossRef]

16. Putra, A.S.B.; Kusumawati, E.D.; Kartikasari, D. Unpacking the Roots and Impact of Workplace Well-being: A Literature Review. *Int. J. Multidiscip. Approach Res. Sci.* **2023**, *2*, 312–321. [CrossRef]

17. Trockel, M.; Bohman, B.; Lesure, E.; Hamidi, M.S.; Welle, D.; Roberts, L.; Shanafelt, T. A Brief Instrument to Assess Both Burnout and Professional Fulfillment in Physicians: Reliability and Validity, Including Correlation with Self-Reported Medical Errors, in a Sample of Resident and Practicing Physicians. *Acad. Psychiatry* **2018**, *42*, 11–24. [CrossRef] [PubMed]

18. Labrague, L.J.; McEnroe-Petitte, D.M.; Leocadio, M.C.; Van Bogaert, P.; Cummings, G.G. Stress and ways of coping among nurse managers: An integrative review. *J. Clin. Nurs.* **2018**, *27*, 1346–1359. [CrossRef]

19. Eva, G.F.; Amo-Setien, F.; Cesar, L.C.; Concepcion, S.S.; Roberto, M.M.; Jesus, M.M.; Carmen, O.M. Effectiveness of intervention programs aimed at improving the nursing work environment: A systematic review. *Int. Nurs. Rev.* **2024**, *71*, 148–159. [CrossRef] [PubMed]

20. Silistraru, I.; Olariu, O.; Ciubara, A.; Rosca, S.; Alexa, A.I.; Severin, F.; Azoicai, D.; Danila, R.; Timofeiov, S.; Ciureanu, I.A. Stress and Burnout among Medical Specialists in Romania: A Comparative Study of Clinical and Surgical Physicians. *Eur. J. Investig. Health Psychol. Educ.* **2024**, *14*, 311–323. [CrossRef] [PubMed]

21. Marais, G.A.B.; Lantheaume, S.; Fiault, R.; Shankland, R. Mindfulness-Based Programs Improve Psychological Flexibility, Mental Health, Well-Being, and Time Management in Academics. *Eur. J. Investig. Health Psychol. Educ.* **2020**, *10*, 1035–1050. [CrossRef] [PubMed]

22. Aiken, L.H.; Sermeus, W.; Van den Heede, K.; Sloane, D.M.; Busse, R.; McKee, M.; Bruyneel, L.; Rafferty, A.M.; Griffiths, P.; Moreno-Casbas, M.T.; et al. Patient safety, satisfaction, and quality of hospital care: Cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ* **2012**, *344*, e1717. [CrossRef]

23. Berndt, J.; Ortelli, T.A. Creating a Healthy Work Environment. *Am. J. Nurs.* **2023**, *123*, 59–60. [CrossRef]

24. Copanitsanou, P.; Fotos, N.; Brokalaki, H. Effects of work environment on patient and nurse outcomes. *Br. J. Nurs.* **2017**, *26*, 172–176. [CrossRef]

25. Suliman, M.; Aljezawi, M. Nurses' work environment: Indicators of satisfaction. *J. Nurs. Manag.* **2018**, *26*, 525–530. [CrossRef]

26. Sinsky, C.A.; Biddison, L.D.; Mallick, A.; Dopp, A.L.; Perlo, J.; Lynn, L.; Smith, C.D. Organizational Evidence-Based and Promising Practices for Improving Clinician Well-Being. *NAM Perspect.* **2020**, 1–15. [CrossRef]

27. Buch, A.; Andersen, V.; Sørensen, O.H. *Knowledge Work and Stress: Between Excitement and Strain [Videnarbejde og Stress: Mellem Begejstring og Belastning]*; Jurist-og Økonomforbundets Forlag: Copenhagen, Denmark, 2009.

28. Fisher, C.D. Conceptualizing and measuring wellbeing at work. In *Work and Wellbeing*; Chen, P.Y., Cooper, C.L., Eds.; Wiley Blackwell: Oxford, UK, 2014; pp. 9–93.

29. Hobfoll, S.E. Conservation of resources. A new attempt at conceptualizing stress. *Am. Psychol.* **1989**, *44*, 513–524. [CrossRef] [PubMed]

30. Bakker, A.B.; Demerouti, E. Job demands-resources theory. In *Work and Wellbeing, Vol. III*; Wiley Blackwell: Hoboken, NJ, USA, 2014; pp. 37–64.

31. Deci, E.L.; Ryan, R.M. Self-determination theory. In *Handbook of Theories of Social Psychology, Vol. 1*; Sage Publications Ltd.: Thousand Oaks, CA, USA, 2012; pp. 416–436.

32. Baptiste, D.L.; Whalen, M.; Goodwin, M. Approaches for establishing and sustaining clinical academic partnerships: A discursive review. *J. Clin. Nurs.* **2022**, *31*, 329–334. [CrossRef] [PubMed]

33. Tsuruwaka, M. Current trends and obstacles in off-the-job nursing ethics training in Japanese hospitals: A cross-sectional study. *Int. J. Med. Educ.* **2024**, *15*, 84–98. [CrossRef]

34. Birkeli, C.N.; Isaksson Ro, K.; Rustad, L.; Kvernenes, M. Educational supervisor's perceptions of their role in supporting residents' learning: A qualitative study. *Int. J. Med. Educ.* **2023**, *14*, 178–186. [CrossRef]

35. Chevalier, J.M.; Buckles, D. *Participatory Action Research: Theory and Methods for Engaged Inquiry*; Routledge: London, UK, 2013.

36. Holden, R.J.; McDougald Scott, A.M.; Hoonakker, P.L.; Hundt, A.S.; Carayon, P. Data collection challenges in community settings: Insights from two field studies of patients with chronic disease. *Qual. Life Res.* **2015**, *24*, 1043–1055. [CrossRef]

37. Tong, A.; Sainsbury, P.; Craig, J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* **2007**, *19*, 349–357. [CrossRef] [PubMed]

38. McIntyre, A. *Participatory Action Research*; SAGE Publications: Thousand Oaks, CA, USA, 2008.

39. Patton, M.Q. Choosing a Sample: The Logic of Purposeful Sampling. In *Program Evaluation Kit. How to Use Qualitative Methods in Evaluation*, 2nd ed.; Sage Publications, Inc.: Newbury Park, CA, USA, 1987; pp. 44–70.

40. Malterud, K.; Siersma, V.D.; Guassora, A.D. Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qual. Health Res.* **2016**, *26*, 1753–1760. [CrossRef]

41. Malterud, K. Qualitative research: Standards, challenges, and guidelines. *Lancet* **2001**, *358*, 483–488. [CrossRef]

42. Halkier, B. Focus Groups as Social Enactments: Integrating Interaction and Content in the Analysis of Focus Group Data. *Qual. Res.* **2010**, *10*, 71–89. [CrossRef]

43. Braun, V.; Clarke, V. Using Themayic analysis in psychology. *Qual. Res. Psychol.* **2006**, *3*, 77–101. [CrossRef]

44. Microsoft Corporation. *Microsoft Excel*; Microsoft Corporation: Redmond, WA, USA, 2017.

45. Swallow, V.N.J.; Van Lottum, C.J. How to manage and display qualitative data using 'Framework' and Microsoft® Excel. *J. Clin. Nurs.* **2003**, *12*, 610–612. [CrossRef] [PubMed]

46. Guba, E.G.; Lincoln, Y.S. Paradigmatic controversies, contradictions and emerging confluences. In *The SAGE Handbook of Qualitative Research*, 3rd ed.; Denzin, N.K., Lincoln, Y.S., Eds.; Sage Publications: Thousand Oaks, CA, USA, 2005; pp. 191–216.

47. Malterud, K. The art and science of clinical knowledge: Evidence beyond measures and numbers. *Lancet* **2001**, *358*, 397–400. [CrossRef] [PubMed]

48. Happell, B. Clinical-academic partnerships research: Converting the rhetoric into reality. *Int. J. Psychiatr. Nurs. Res.* **2005**, *11*, 1218–1226.

49. Jones, S.; Bradbury, A.; Shortland, S.; Hewett, F.; Storey, K. Clinical academic careers for general practice nurses: A qualitative exploration of associated barriers and enablers. *J. Res. Nurs.* **2021**, *26*, 704–715. [CrossRef]

50. Andersen, I.M.P. (Ed.) *Evidencebased Medicine [Evidensbaseret Medicin]*; GADs: Copenhagen, Denmark, 2014; pp. 15–21.

51. Ng, E.; Jones, A.A.; Sivapragasam, M.; Nath, S.; Mak, L.E.; Rosenblum, N.D. The Integration of Clinical and Research Training: How and Why MD-PhD Programs Work. *Acad. Med.* **2019**, *94*, 664–670. [CrossRef]

52. Haase, K.R.; Strohschein, F.J.; Horill, T.C.; Lambert, L.K.; Powell, T.L. A survey of nurses' experience integrating oncology clinical and academic worlds. *Nurs. Open* **2021**, *8*, 2840–2849. [CrossRef] [PubMed]

53. Holge-Hazelton, B.; Kjerholt, M.; Berthelsen, C.B.; Thomsen, T.G. Integrating nurse researchers in clinical practice—A challenging, but necessary task for nurse leaders. *J. Nurs. Manag.* **2016**, *24*, 465–474. [CrossRef]

54. Trusson, D.; Rowley, E. Qualitative study exploring barriers and facilitators to progression for female medical clinical academics: Interviews with female associate professors and professors. *BMJ Open* **2022**, *12*, e056364. [CrossRef]

55. van Oostveen, C.J.; Goedhart, N.S.; Francke, A.L.; Vermeulen, H. Combining clinical practice and academic work in nursing: A qualitative study about perceived importance, facilitators and barriers regarding clinical academic careers for nurses in university hospitals. *J. Clin. Nurs.* **2017**, *26*, 4973–4984. [CrossRef]

56. Vils Pedersen, M.R. What motivates radiographers to start working with research? *Radiography* **2023**, *29*, 215–220. [CrossRef]

57. Logan, P.A.; Gallimore, D.; Jordan, S. Transition from clinician to academic: An interview study of the experiences of UK and Australian Registered Nurses. *J. Adv. Nurs.* **2016**, *72*, 593–604. [CrossRef] [PubMed]

58. Robichaud-Ekstrand, S. New Brunswick nurses' views on nursing research, and factors influencing their research activities in clinical practice. *Nurs. Health Sci.* **2016**, *18*, 246–255. [CrossRef] [PubMed]

59. Nielsen, K.; Christensen, M. Positive Participatory Organizational Interventions: A Multilevel Approach for Creating Healthy Workplaces. *Front. Psychol.* **2021**, *12*, 696245. [CrossRef] [PubMed]

60. Nielsen, K.; Yarker, J.; Munir, F.; Bültmann, U. IGLOO: An integrated framework for sustainable return to work in workers with common mental disorders. *Work Stress* **2018**, *32*, 400–417. [CrossRef]