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Research Article

The Impact of the "Employee Therapy" Model on Hospital Employees

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Abstract

The prevalence of musculoskeletal disorders among health care workers, especially nurses, is up to 88%. Guidelines recommend physiotherapy as treatment among others. Barriers taking up physiotherapy are costs, business hours and geographical distance. To overcome these barriers for hospital employees and to foster physiotherapy students' competencies in a practical setting, the "Employee Therapy" as part of a course in the undergraduate physiotherapy program was designed: Physiotherapy students in their 5th semester treat employees from the adjoining hospital independently under supervision. The pilot study´s purpose is to evaluate the "Employee Therapy" model in terms of treatment efficacy, students´ gain in competences and patients´ as well as students´ satisfaction. Retrospective quantitative and qualitative data collected in the course "Applied Physiotherapy 2", where the "Employee Therapy" is included, were analyzed. **Results** show that patients improved statistically significant in pain and function. Patients were rather or fully satisfied with the treatment provided. The overall impression rating was positive or rather positive by students and patients. Students subjectively gained competences that can be primarily assigned to the physiotherapist´s role of the expert, team worker and communicator. The results indicate that the "Employee Therapy" model is beneficial for all parties involved. Hospital employees get physiotherapeutic care individually in a setting adapted to their needs. Moreover, the study shows that physiotherapy students in their 5th semester are capable treating patients independently under supervision and expand their competencies. Further research is crucial to expand the understanding about specific effects, like sick-leave or job retention, and the model´s development.

Keywords: Hospital employees; Nurses; Musculoskeletal disorders; Physiotherapy; Practical training; Employee therapy

Introduction

Musculoskeletal disorders (MSD) pose a significant occupational health challenge, particularly for healthcare professionals like nurses, who engage in physically demanding tasks, leading to prolonged periods of physical activity and repetitive motions [1-5]. The prevalence of MSDs among nurses of 18% to 88% depending on the body region [2, 6-8] has drawn increasing attention due to its substantial impact on both individual well-being and the overall healthcare system [2]. The highest numbers are reported for low back pain [2, 6-8]. Various risk factors, e.g., age, female gender, or work-related factors like back bending and twisting or manual patient-handling, are mentioned for developing low back pain as a health care professional. To minimize the risk of low back pain occurrence especially for nurses, it is recommended to take a rest from heavy physical workloads on a regular basis, modify the workplace, implement safety polices at work, revise the working hours, recruit enough staff and increase awareness about safe ergonomics at work. Furthermore, the benefits of exercising on a regular basis are pointed out [9].

With the high prevalence of MSDs and the fact that various preventive interventions like ergonomic training or general exercise are already implemented in hospital settings [10-13] in mind, it can be assumed, that a solely focus on prevention is not

effective in overcoming work-related MSDs among health care workers.

Guideline-recommended treatment options for MSDs range from manual therapy and exercise to pharmacological interventions up to lifestyle modifications, whereas the important role of physiotherapy is underlined [14,15]. Barriers to take advantage of physiotherapy are costs, waiting time, business hours and distance to work or home among others [16-18]. Thinking of hospital employees´ work settings, these factors might apply to them as well.

An option to overcome these barriers and treat MSDs among hospital employees is to bring hospitals and physiotherapy educational institutions together. Meaning, hospital employees get economical and time-friendly treatment options, and educational institutions get the possibility to foster students' practical skills. Speaking of the latter, physiotherapists embody diverse roles within their professional competence profile, including expert, communicator, team worker, manager, health care promoter, innovator and professional. These roles require a range of skills and responsibilities, from leading profession-specific activities to fostering professional relationships, actively participating in interdisciplinary teams, contributing to organizational effectiveness, preventing illness, engaging in lifelong learning, and upholding ethical values [19].

The Carinthia University of Applied Sciences (CUAS) in Austria emphasizes the importance of training all of these skills before entering the workforce. Therefore, and with the situation about MSDs among health care workers mentioned beforehand in mind, a unique model called "Employee Therapy" was developed together with the Institute of Physical Medicine and General Rehabilitation at the Klinikum Klagenfurt (Austria): Physiotherapy students in their 5th semester treat hospital employees as part of a course independently under supervision. On one hand, this model has the potential for students taking over the entire physiotherapy process, sharpening their skills, fostering self-reliance, initiative, and optimal preparation for their professional careers in a safe environment under supervision. On the other hand, hospital employees are provided with physiotherapy care to treat work-related MSDs individually, free of charge and with minimal organizational effort.

To our knowledge, such model hasn´t been implemented and evaluated elsewhere. Related models like training units [20] or teaching (group) practices [21] differ regarding the target groups and miss the aspect of focusing on students and hospital employees.

Therefore, the aim of this study is to evaluate the physiotherapeutic treatments´ efficacy, the students´ gain in competencies in relation to physiotherapists´ roles and the setting from the students´ and patients´ perspective in relation to the "Employee Therapy".

Materials and Methods

Prior to evaluating retrospective patient data, the Ethics Committee of the State of Carinthia was contacted. There were no ethical objections to the planned project and no official formal consent was necessary.

The data used in this retrospective pilot study were collected from the course "Applied Physiotherapy 2 (APT2)" at the CUAS in the period of October 2021 to December 2023. APT2 takes place in the 5th semester of the physiotherapy bachelor degree program. In the course, the "Employee Therapy" is implemented. Students provide physiotherapy care independently under supervision. Patients are employees of the cooperation hospital Klinikum Klagenfurt (Austria). There, employees are given the offer receiving physiotherapy care if needed. As part of the "Employee Therapy" patients were assigned to physiotherapy at the CUAS campus through a doctor's referral by the Institute of Physical Medicine and General Rehabilitation at the Klinikum Klagenfurt.

Patients then received seven unit's physiotherapy twice a week lasting 30min each plus one prescribed additional physical treatment (electrotherapy, ultrasound or mud-pack therapy). Each patient was cared for by one or sometimes two students. The students were in charge of the whole physiotherapy process including an individual home exercise program, preparing the setting, coordinating the temporal and spatial planning as there were 4 patients treated at a time, taking care of the therapy phone and if necessary, consulting the doctor. In general, the students carried out the tasks independently but were accompanied and supported by the APT2 lecturers (MR/UH) the whole time. After the completion of the therapy respectively APT2, the patients as well as the students were asked to fill in an anonymous online survey voluntarily.

Data analyzed in this study, which were collected from students through the physiotherapy process standardly, are sociodemographic data like age and occupation, interventions taken (physiotherapy, electrotherapy, ultrasound, mud-pack therapy) and therapy outcome related to pain (Numeric Pain Rating Scale) and functional assessments (e.g., Neck Disability Index, Oswestry Disability Index, Goal Attainment Scale). In addition, patients´ satisfaction with the physiotherapy treatment and overall impression as well as the students´ overall impression rated with a 5-point Likert scale each is evaluated. Furthermore, an open question regarding the students´ skill acquisition through APT2 is analyzed.

Descriptive (M, SD, f) and inferential statistics (t-test for dependent samples) via IBM SPSS® version 28 and Microsoft Excel

2021 were used to evaluate quantitative data. To analyze the open question, a structuring qualitative content analysis was carried out [22]. A deductive approach was chosen to define the categories, namely the seven physiotherapists´ roles: expert, communicator, team worker, manager, health care promoter, innovator and professional [19]. Complete answers were determined as the evaluation as well as context unit. Single words were defined as coding unit. For example, "specific therapy planning" was coded as "expert", "patient communication" as "communicator". Following the categorization, a frequency analysis was done. Data analysis was done by one researcher (UH).

Results

75 students provided physiotherapeutic care under supervision to 44 patients (79.6% women and 20.4% men). In total, 274 units exercise therapy, 186 units electrotherapy and 71 units mud-pack therapy were carried out from 2021 to 2023 in each year from October to December. The patients had a mean age of 47 years (SD = .74). 34.1% were nurses, 22.7% physicians, 15.9% administrative personnel and 27.3% other hospital employees.

Regarding the physiotherapeutic efficacy, patients decreased their individual pain perception statistically significant on the Numeric Pain Rating Scale on average by 2.88 points (SD=1.66; M_{before} = 5.25; SD_{before} = 1.84; M_{after} = 2.26; SD_{after} = 1.92; t(40) = 11.09, p < .001). The minimal clinically important difference was reached in 82.9% of the cases. Due to different diagnosis and complaints various functional assessments were used ($f_{NeckDisabilityIndex}$ = 15; $f_{OswestryDisabilityIndex}$ = 6; $f_{ShoulderPainAndDisabilityIndex}$ = 5; f_{Others} = 5). Overall, there was a statistically significant mean improvement of 44.6% (SD = 24.64; t(30) = 5.71, p < .001) and in 45.2% of the cases, the minimal clinically important difference was reached. Goal achievements validated with the Goal Attainment Scale are presented in Figure 1.

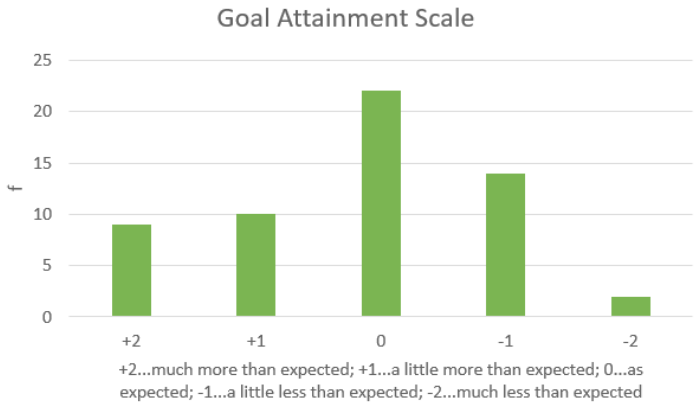

Figure 1: Therapy Outcome: Goal Attainment Scale.

Asked about the satisfaction with the physiotherapy treatment, all patients were rather (f = 14.71%) or fully (f = 85.29%) satisfied. The patients´ and students´ overall impression ratings are displayed in Figure 2.

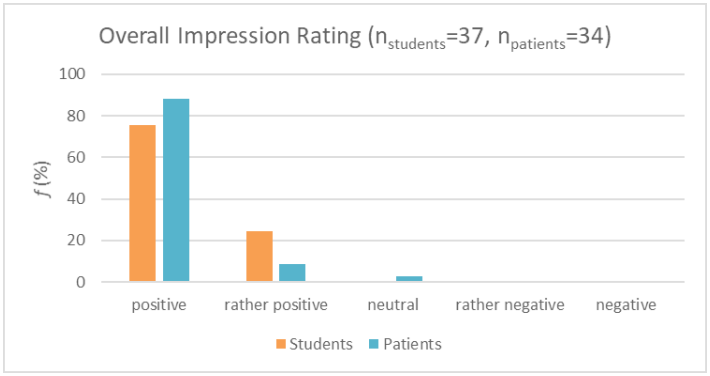

Figure 2: Students´ and patients´ overall impression rating.

Regarding the skills acquisition, students named skills that can be assigned to the expert´s role (f = 35) most often, followed by the team worker's role (f = 9) and communicator´s role (f = 8). Skills associated with the health care promoter´s and professional´s role were mentioned once each.

Discussion

The results indicate that physiotherapy care provided by students in their 5th semester in the course of "Employee Therapy" is effective. Patients improved in pain and function, whereby the vast majority of improvement concerning pain and nearly half regarding function can be considered clinically relevant. Almost three quarters of the set goals were achieved as expected, a little or much more. All patients were fully or rather satisfied with the physiotherapy treatment. Also, the general impression regarding the "Employee Therapy" was positive or rather positive (one neutral rating) for patients as well as students. Students subjectively improved their skills mainly regarding the expert´s, team worker´s and communicator´s role.

The "Employee Therapy" model shows various benefits for the involved parties. For the patients, the "Employee Therapy" model is likely to overcome barriers [16-18] seeking physiotherapeutic care individually like costs, waiting time and business hours. In our model the offer is cost-free for patients, the dates are set in advance and coordinated with working hours as well as distance to work is minimized as it takes place on the same campus. As the results indicate, the therapy provided by physiotherapy students in their 5th semester is effective in treating work-related

musculoskeletal disorders. The patient-centered interventions are evidence based, follow guideline recommendations [14,15] and consider strategies (e.g. general exercising on a regular basis) for a potentially sustainable reduction of work-related risk factors [9]. Thus, hospital employees especially nurses might be able to perform their physically demanding job tasks in a healthier way.

Speaking of the hospital, a model like the "Employee Therapy" providing physiotherapy care to hospital employees has the potential to add valuable benefit in the interests of employee health in addition to already widespread preventive interventions. Furthermore, such an offer might be helpful when used for promotion in terms of employee recruitment as well as retention via potential influence on personal health status as well as lifestyle and coping behavior as pull factors [23].

From the students´ as well as the educational institutions´ perspective, the increase in competencies regarding the physiotherapists´ roles [19], especially expert, team worker and communicator should be mentioned. Furthermore, the setting allows students to implement a complete physiotherapy process including organizational issues independently but in a "safe" and learning-enabling environment under supervision. Meaning, students gain skills and competencies that are required in work-place settings. Another possible benefit for students but the hospital as well, seems to be the contact with the clinic as a potential workplace.

Reflecting this pilot-study´s methodology, a retrospective approach seems appropriate to get first insights on therapy effectiveness, students´ and patients´ satisfaction as well as students´ competence gain as to our knowledge, there is no existing evaluation of such model in literature. The fact that only one researcher carried out the data analysis also seems justifiable for this reason. Additionally, data collection in regard to therapy outcomes, was carried out as part of the physiotherapeutic process by the student independently. This means, that data collection and evaluation was independent of each other. Also, it seems legit in a retrospective approach that APT2 supervisors are researchers as well.

As the "Employee Therapy" model´s evaluation shows promising first insights, further research seems indicated and necessary. Research in this context should be prospective and the model´s impact on economic parameters, like sick-leave, job satisfaction or retention of hospital employees, especially nurses, should be considered. Furthermore, it should focus on deepening and specifying the students´ gain in competencies regarding the physiotherapists´ roles subjectively as well as objectively. This could on the one hand help students to reflect on individual improvements. On the other hand, it could possibly help to further develop physiotherapy bachelor programs curricula. Also, a therapy outcome comparison between therapy implemented by students in their 5th semester and established physiotherapists in context of the "Employee Therapy" should be examined.

Based on these results, the "Employee Therapy" model could be further developed and potentially extended over a further period of the year.

Conclusions

The "Employee Therapy" seems to be a model providing hospital employees with high-quality physiotherapy in a way that is likely to be satisfactory for all parties involved. Reflecting on our study´s purpose we can conclude that hospital employees receive effective physiotherapy care, patients´ and students´ are overall satisfied with the model and students expand profession-specific competencies in a practical setting.

Implementing such models adapted to the respective conditions on site seems desirable. However, additional research is crucial to expand the knowledge about effects as well as further developing the model.

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Ethical Guidelines

Provide a statement of compliance with relevant ethical guidelines, including any necessary approvals from institutional review boards or ethics committees.

As retrospective anonymized data, which are collected as standard in the physiotherapy process and in the course APT2 were analyzed, no ethical objections were stated from the Ethics Committee of the State of Carinthia and no formal consent was necessary (E-mail correspondence from February 8, 2024).

Conflict of Interest

Disclose any potential conflicts of interest that may influence the results or interpretations of the manuscript.

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