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ORIGINAL ARTICLE

Patient satisfaction with clinical services provided by chiropractic students under supervision compared to licensed chiropractors: An observational study

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ABSTRACT

Objective: This study investigated patient satisfaction with care provided by chiropractic students under supervision vs supervisors in a Danish hospital setting.

Methods: A cross-sectional observational study of patient satisfaction was conducted at the Spine Center of Southern Denmark, where chiropractic students from the University of Southern Denmark complete an 8-week internship in their final year of pregraduate training. Patients were assigned to students or supervisors based on administrative convenience (ie, natural allocation). Blinded from the aim of the study, all patients seen by a chiropractor (with or without a student) were invited to answer a questionnaire rating satisfaction with the clinical encounter. Results were analyzed using ordinal logistic regression with group allocation blinded by the investigators.

Results: Results from 438 participants (response rate = 88%) showed no significant difference in patient satisfaction between the student and supervisor groups. Although a small difference favored the supervisor group, the student group had a higher proportion of high and very high satisfaction combined.

Conclusion: Satisfaction differed minimally whether patient care was administered by students under the supervision of a licensed chiropractor or by licensed chiropractors alone. Our findings suggest that patients do not negatively view student involvement in clinical consultations at a Danish hospital.

Key Indexing Terms: Patient Satisfaction; Chiropractic; Integrated Delivery System; Education; Personnel Evaluation

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INTRODUCTION

Practice-based learning is essential in health care education, allowing students to apply their knowledge and skills to real-life situations.[1] However, transitioning from the theoretical world of academia to the practical world of health care can be challenging for students who must develop personal competencies when interacting with patients.[2,3] In clinical internships, students often assess patients while supervised by a licensed clinician.[4] However, this can be challenging for the supervisor, as too little supervision can lead to suboptimal patient care, while too much supervision can hinder learning by interfering with student-patient interaction.

Ensuring comprehensive inclusion and supervision of students in clinical internships should be a priority and a team effort among the clinicians in departments receiving students in internships.[5] Nonetheless, some clinical staff may be concerned that care provided by students may be perceived as inferior by patients. To address such concerns, patient reported experience measures can be used to assess patient satisfaction with care provided by students.[6] This has been explored extensively for medical students in hospital settings.[7–11] However, including nonmedical diagnosticians, such as chiropractors, in hospital settings is becoming more common,[12–16] which breaks the norm of what patients may expect with their clinical encounter. Thus, when chiropractic clinical internships occur in hospital settings and supervision occurs by chiropractors, there is a need to assess whether patients are satisfied.

Chiropractic education in Denmark is similar to "medical school," with students attending the same classes during their bachelor's degree before specializing at the obligatory master's level. During their master's degree, chiropractic students complete clinical internships in outpatient spine hospital departments. This is a different approach from the ones taken by most other chiropractic teaching institutions, where pre-graduate clinical

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training typically is undertaken in "teaching clinics" affiliated with the educational institution.[17–19] Research on patient satisfaction with chiropractic care in different settings exists, including teaching clinics,[20,21] but only 1 study was conducted on hospital patients, not within a teaching environment.[22] We know from a previous national Danish survey of patient satisfaction that care is considered overall satisfactory for chiropractors within the hospital. However, in these surveys, there is often a single patient who comments negatively on student involvement, which can be perceived as a disadvantage for patients when provided in the report.

Nearly all Danish chiropractic students are in clinical internships at the Spine Center of Southern Denmark. We have no data on whether patient satisfaction differs between chiropractic students being supervised and licensed chiropractors. We investigated whether patients were satisfied with the care provided by chiropractic students (ie, *student*) under the supervision of senior licensed and experienced chiropractors compared with care provided by senior chiropractors alone (ie, *supervisor*). Our investigation was carried out in a public government-funded hospital spine center. Based on the previous comments in our department's satisfaction questionnaires, we hypothesized that patient satisfaction would be higher when senior chiropractors provided care.

METHODS

Design

We evaluated patient satisfaction with the initial diagnostic consultation at the Spine Center of Southern Denmark through a cross-sectional observational study. We prospectively uploaded the trial protocol and statistical analysis plan to the Open Science Framework (https://osf.io/8h6st/) and obtained approval from hospital management as a quality assurance project (ID: 22/993). Data processing is regulated in the Danish Act on Research Ethics Review of Health Research Projects section 14, subsection 2, stating that health research based solely on questionnaire surveys and registry data is exempt from the obligation to notify the ethics committees.[23]

Participants

We recruited participants consecutively from the medical unit of the Spine Center of Southern Denmark, University Hospital of Southern Denmark,[24] a large regional government-funded outpatient hospital with a yearly patient consultation count of more than 15,000. Eligibility criteria included being at least 18 years of age and proficient in Danish. There were no exclusion criteria. All participants gave written and oral informed consent to participate in the study.

Clinical Encounters at the Spine Center of Southern Denmark

The spine center's criteria for referral are persistent spinal pain and unsuccessful primary care treatment.[25] Patients can be referred directly from general practice, other medical specialists, private practicing chiropractors, and other hospital departments. The initial diagnostic consultation includes an interview, objective examination, review of existing files, imaging, and other related activities, a report of findings, and a management plan based on shared decision-making principles.

Chiropractic students from the University of Southern Denmark complete an 8-week internship at the Spine Center in the fifth and final year of pre-graduate training. They attend to patients under the supervision of senior chiropractors or medical doctors and are primarily involved in the initial diagnostic consultation. The supervisors observe the student-patient encounter in person or, more commonly, over closed-circuit video, allowing for privacy while ensuring direct clinical supervision. For practical reasons and to ensure maximum homogeneity within the groups and anonymity, we opted only to include supervision by senior chiropractors.

The consultation typically begins with the student presenting as a chiropractic student and clarifying that a licensed clinician supervises through the video system. After the consultation, the student and supervisor discuss findings and management plans before patient reporting. The supervisor is physically present during this stage and meets the patient for the first time.

Group Allocation

Students sign up for patients to be supervised based on administrative convenience (eg, time of day and supervisor availability) and not on patient characteristics or the referral. Students do not have access to this information before the encounter as they are not allowed to read the clinical records before selecting the patient. We considered this convenience sampling approach to be a natural allocation. Thus, patients seen by a student under the supervision of a chiropractor (the student group) or a chiropractor (the supervisor group) should be similar in demographic and clinical characteristics.

Intervention and Data Collection

After each consultation in the study period, all chiropractors were instructed to invite all patients to participate in a quality project about patient satisfaction. If the patient consented, the chiropractor ticked an obfuscated item on the questionnaire to indicate whether a student was involved or not. Patient identity was recorded on the consent form, but not the identity of student or supervisor. The patient (now participant) then completed the questionnaire privately in a waiting area away from the consultation room and submitted it through a secure mailbox. This prevented any direct influence by the student or supervisor upon questionnaire completion. A research secretary, not otherwise a part of the study, collected the questionnaires daily and performed the data transfer from papers into a spreadsheet, using a double-entry procedure to ensure accurate data transfer.

Variables of Interest

Patient Satisfaction (Outcome Variables)

The questionnaire items on patient satisfaction were copied from the biannual *National Danish Survey of Patient Experiences* (LUP).[26] The LUP is a questionnaire of 23 items from multiple domains of patient experiences. We selected the 7 most relevant items concerning our aim based on consensus within the research team, the departmental quality assurance team, and management. The primary outcome was overall satisfaction with the visit (*Overall satisfaction*), and the secondary outcomes were preparedness of hospital staff (*Preparedness*), relevance of interview (*Interview*), getting answers to the questions asked (*Answers*), information provided (*Information*), time dedicated to the patient (*Time*),

and availability of relevant health care providers (*Personnel*) (Supplementary File 1).

A 5-point Likert scale, anchored from "Not at all" to "Very much" with an additional option to answer "I don't know" (labeled *unknown*) was used for all items. At the end of the questionnaire, a QR code was available for participants to submit a longer free-text description of their experiences. However, none did.

Clinical Registry (Explanatory Variables)

All patients referred to the spine center were invited to electronically complete a clinical registry, "Mine RygData" (MiRD) a week before their appointment. MiRD contains validated questionnaires on domains such as demographics, pain intensity (numerical rating scale), loss of function (Oswestry Disability Index), employment, and psychosocial factors (Brief Screening Questions for Anxiety, Depression, Catastrophization, and Fear of Movement) that serve as baseline characteristics.[27] Approximately 80% of patients complete MiRD ahead of their encounter. These baseline characteristics, including sex and age, were defined as explanatory variables (Supplementary File 2).

Blinding

While supervisors were aware of the trial's aim, participants and students were unaware of the group comparison part of the study and were considered blinded. Results were analyzed and presented to investigators in a blinded manner. We drafted 2 interpretation scenarios based on the primary and secondary outcome data and, in consensus, made a clinical interpretation of the results. All investigators approved and signed the interpretations,[28] before the group variable was revealed.

Statistical Methods

As the study was exploratory, we could not predetermine a specific sample size estimate based on previous data. Instead, we balanced the need for a sufficiently large sample to allow for subgroup analyses with the practical considerations of the study and settled on a total sample size of 500. Furthermore, as participants were recruited consecutively and allocated into group based on natural selection (student vs supervisor), we planned to assess the distribution of participants after the first 150 questionnaires had been collected. We intended to stratify invitations if necessary to obtain approximately equal group sizes. However, this was not necessary.

Explanatory variables are presented as means with standard deviations for continuous variables and count with frequencies for categorical variables. Group differences were compared using the Wilcoxon rank sum test or χ^2 test as appropriate. *P* values are presented as unadjusted and corrected for multiple testing using the False Discovery Rate (FDR) method.[29] A modified CONSORT flowchart, fitting the design, was used to describe the inclusion rate and data collection.

We compared explanatory variables for all patients included in the study with those not included, whether because they declined the invitation, the supervisor failed to invite them, or they did not submit their questionnaire. We used the same statistical comparison approach as above.

Association Between Group and Satisfaction

We used stacked bar charts to illustrate the answer distributions of the LUP items stratified by group allocation. Group comparisons were conducted using ordinal logistic regression stratified by each survey item (ordered from very low to very high satisfaction) as the dependent variable and group allocation as the independent variable. Results were presented as odds ratios (ORs), 95% confidence intervals (95% CIs), and *p* values. We used the Likelihood ratio test to calculate *p* values.

To make the model simpler and easier to understand, we divided the 5-point Likert scale into 2 categories: low satisfaction ("very low" and "low") and high satisfaction ("somewhat," "high," and "very high"). We then applied logistic regression with the dichotomized response as the dependent variable and group allocation interacting with the survey items as the independent variables. This approach helped us simplify the interpretation of satisfaction within each group. However, due to limited variability in the data, we extended our initial dichotomization to include "somewhat satisfied" in the low satisfaction group based on posthoc analysis of nonblinded data.

Results were extracted from the model contrasts (comparing low vs high satisfaction for each survey item) and presented as ORs for scoring low satisfaction for students compared with supervisors with 95% CIs and *p* values corrected for multiple testing using the FDR method.

Based on department-wide LUP data, we pragmatically defined the minimal important clinical difference (MCID) at a 5% difference between the binary satisfaction response for the primary outcome but notably did so a-priori.

For all statistical comparisons, we omitted observations where participants answered *unknown*. The higher satisfaction/satisfied response was used as the reference group for OR calculations. Thus, ORs represent scoring towards lower satisfaction/not satisfied.

Secondary Exploratory Analysis

We conducted an exploratory data-driven analysis to investigate the association between group and baseline characteristics and patient satisfaction. We fitted a logistic regression model using the "posthoc dichotomization" of patient satisfaction (ie, including "somewhat satisfied" in the low satisfaction group) as the dependent variable and each explanatory variable (PROM) interacting with group allocation (student vs supervisor), stratified by each questionnaire item (each LUP item) as independent variables.

We used forest plots to visualize the results and removed all model fits with insufficient data (ie, models with no one scoring low satisfaction). As a preparatory step, we ran univariable regressions for each explanatory variable. We ran the best-subset regression using the *glmulti* package for R.[30] This tests all possible models combining all variables, including the group comparator. We assessed best-model fit by assessing the Akaike Information Criterion, corrected for small sample sizes (AICc).[31]

To select the "best" model, we assessed the 100 best-fitting models. We plotted the model-average importance of terms (ie, the probability of including a variable in the top 100 models), setting a probability of 0.8 as the lower limit of importance.[32] We then assessed the models that differed with an

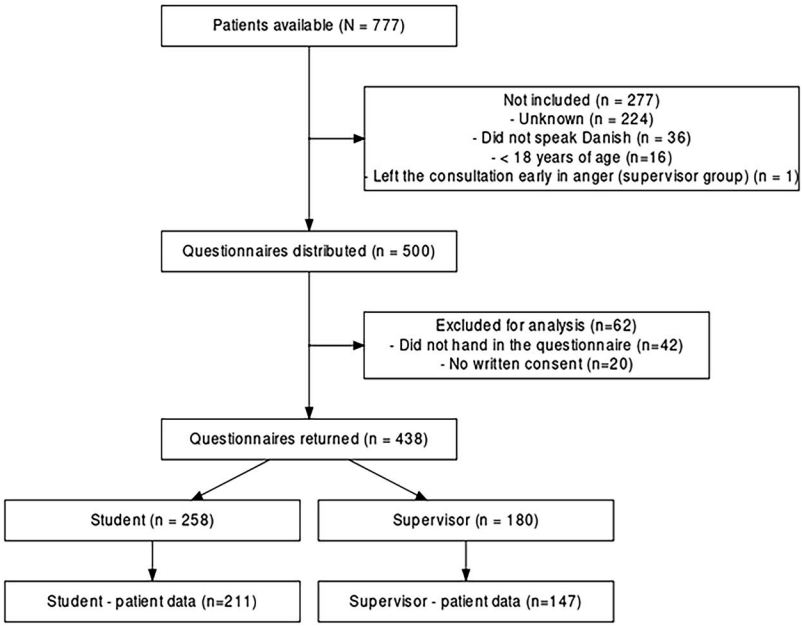

Figure 1 - Modified CONSORT flowchart.

AICc of 2.[33] The final model was selected based on predictor variables, AICc, and weights of being the best-fitting model. The result is presented with ORs, 95% CI, *p* values, and the model parameters, including the coefficient of determination (R^2). Only participants with complete data on all selected explanatory variables were included in this step. We checked model assumptions using a posterior predictive check and checked for collinearity using the *performance* package for R.[34] All analyses were completed using R vers. 4.2[35] employing the Tidyverse language,[36] with RStudio 2022.07 for Zorin OS 16.1, Linux.

RESULTS

Participants and Baseline Demographics

From August 31, 2022, to October 11, 2022, 500 questionnaires were printed and distributed among supervisors. We included 438 participants (response rate 88%) of a total 777 eligible patients, 258 were seen by a student under supervision and 180 by a supervisor (Fig. 1). There were no differences in baseline characteristics between the groups (Table 1).

Noninclusion

The MiRD questionnaire was completed by 358 (82%) study participants and 287 (85%) eligible patients who were not included/invited. Patients not-included had statistically significant higher pain intensity, more spine-related disability, and more catastrophizing thoughts (Supplementary File 3). Additionally, a higher proportion of patients seen by a student (66%) was included compared with a supervisor alone (54%).

Association Between Group and Satisfaction

There was little variance in questionnaire responses, with the majority reporting "high" or "very high" satisfaction across items (95% in the student group and 97% in the supervisor group). In the supervisor group, across outcomes, there was a slightly higher proportion scoring in the extremes compared with the student group (very high [75% vs 70%] and very low levels of satisfaction [0.2% vs 0.0%]) (Fig. 2). We found statistically significant higher odds of scoring towards lower satisfaction with student encounters for *overall satisfaction* (OR = 1.54 [1.03–2.33]) and nonsignificant tendencies for secondary outcomes (ORs between 1.05 and 1.48) (Table 2). However, when we dichotomized responses using the posthoc definitions, the opposite tendencies were observed (overall satisfaction: 0.68 [0.24–1.98]) (Table 3). In summary, the satisfaction distributions across groups were very similar. Group differences were not evident; our a-priori MCID of 5% was not reached. Using the a-priori definition 7 (4%) had low satisfaction in the supervisor group and 6 (2%) in the student group. In the posthoc classification, this increased to 42 (23%) for supervisor group and 37 (14%) for the student group.

To further investigate the distribution of the patients who scored low satisfaction. We plotted a stacked-bar plot of the cumulative low satisfaction score as a function of total low satisfaction numbers (ie, number of participants scoring low satisfaction on the y-axis and total number of items on the x-axis, color fill based on group allocation). We found that low satisfaction was distributed across several individuals and related to different items (Fig. 3).

Across questionnaire items, only a few explanatory variables were associated with low satisfaction when factoring in the group interaction. We generally observed the same tendencies across items, with higher levels of anxiety being associated with low satisfaction (Fig. 4).

A total of 242 participants had the required data for the best-subset analysis. The best model mainly predicted low satisfaction by lower body mass index and high anxiety. However, with an R^2 of 0.074, the selected baseline characteristics had limited predictive

Table 1 - Baseline Characteristics in the 2 Groups

Baseline Characteristic	Supervisor (n = 180)	Student (n = 258)	*p* value	Adjusted *p* value
Age [18+]	52.93 (17.0)	56.60 (17.0)	.034	.3
Sex [Female]	112 (62%)	152 (59%)	.50	.90
Body mass index	27.5 (6.0)	27.6 (5.5)	.60	.90
Missing data	39	61		
Typical spine pain [0–10]	5.5 (2.1)	5.7 (2.3)	.6	.9
Missing data	41	65		
Spine-related disability [0–100]	32.7 (16.1)	34.1 (17.0)	.7	.9
Missing data	40	61		
Employment			.9	.9
Other/unknown employment	65/180 (36%)	87/258 (34%)		
Ordinary employment	9/180 (5.0%)	17/258 (6.6%)		
Flexible employment	65/180 (36%)	95/258 (37%)		
Student employment	41/180 (23%)	59/258 (23%)		
Anxiety [0–10]	4.5 (2.9)	4.5 (3.0)	.9	.9
Missing data	50	63		
Fear avoidance [0–10]	3.5 (1. 8)	3.4 (1.9)	.8	.9
Missing data	59	77		
Catastrophizing [0–10]	3.2 (1.8)	3.2 (1.9)	.8	.9
Missing data	65	77		
Depression [0–10]	3.1 (1. 9)	3.1 (2.1)	.7	.9
Missing data	57	73		

Continuous variables presented as mean (standard deviation) and categorical variables as count (frequency).

capability, and whether a student was involved or not had no predictive value (Supplementary File 4).

DISCUSSION

Patient satisfaction was high for all items investigated, with no significant difference between those patients seen by a supervised student or a supervisor. It may concern clinicians or hospital management that patients should perceive clinical encounters with students as unsatisfactory. Such concerns may reflect a heuristic availability bias, where isolated examples are overemphasized. However, based on patient satisfaction alone, our findings suggest that patients do not view student involvement in clinical consultations negatively.

Our study was the first to assess patient satisfaction for chiropractic students in a hospital setting. Patient satisfaction has previously been investigated extensively for medical students, and a systematic review reported that patient satisfaction with care provided by medical students is similar to satisfaction by licensed practitioners. However, patient satisfaction is not a

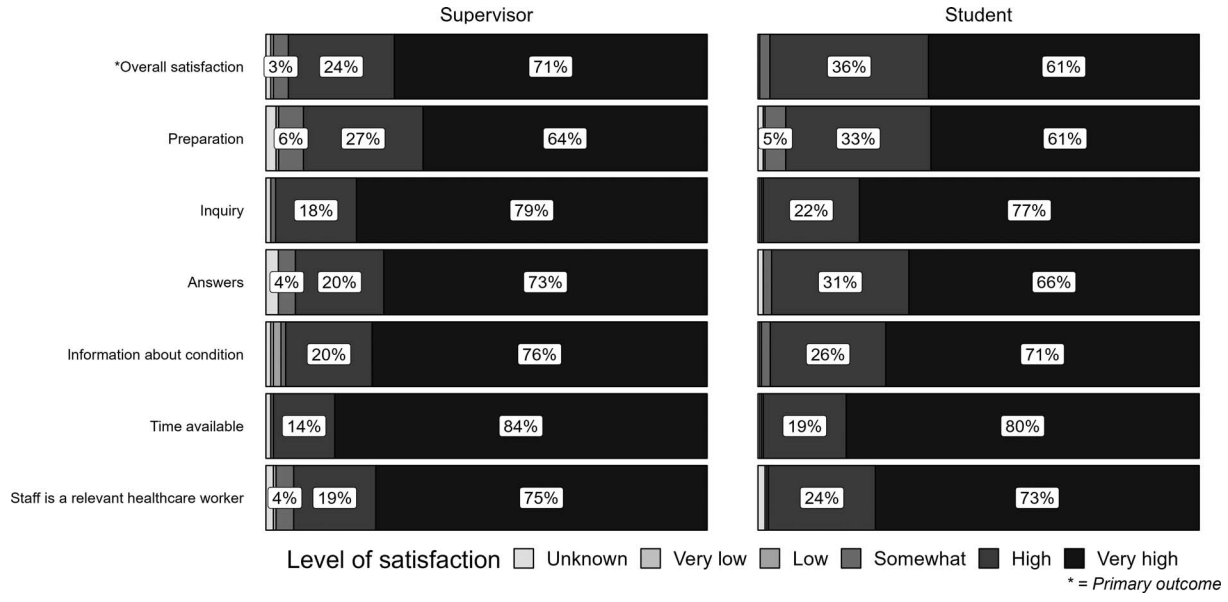

Figure 2 - Distribution of questionnaire responses across the 2 groups.

Table 2 - Odds Ratios for Scoring Lower Satisfaction for Students Under Supervision Compared With the Supervisors[a]

Variable	Odds Ratio	95% CI	*p*
Overall satisfaction	1.54	1.03–2.33	.04
Preparation	1.17	0.79–1.75	.44
Inquiry	1.19	0.75–1.92	.47
Answers	1.48	0.97–2.29	.07
Information about disease	1.30	0.84–2.03	.25
Time available	1.43	0.86–2.43	.17
Staff is a relevant health care worker	1.05	0.67–1.65	.84

[a] Ordinal logistic regression with Likert-scale answering options from very low to very high satisfaction. Odds ratios represent being unsatisfied compared with satisfied for students compared with supervisors (reference group). The only significant odds ratio (overall satisfaction) did not stem from a higher prevalence of dissatisfaction but, on the contrary, from a higher proportion being highly satisfied compared with very highly satisfied. The same tendency is observed for the other questions.

direct proxy for the acceptance of student involvement, and some patients may express satisfaction while disliking the participation.[37]

The current study examined patient satisfaction with clinical consultations using subquestions from the LUP, a recurring national patient survey. However, measuring patient satisfaction is a complex task,[7–11,38] and our findings need more external validity for comparison to other questionnaires. Still, it allowed us to explore patient satisfaction with chiropractic students within a recurring national survey of satisfaction with hospital care.[26]

Although high satisfaction was found regardless of student involvement, satisfaction alone does not guarantee good clinical practice, including comprehensiveness, quality, and relevance. Students may err on the side of caution and conduct comprehensive interviews and examinations, which may affect time expenditure.[39] Supervisors are responsible for ensuring quality in clinical decision-making when students are involved and may proceed with more caution when supervising.

Table 3 - Association Between Group and Satisfaction of Scoring Lower Satisfaction for Students Under Supervision Compared With the Supervising Chiropractor (Posthoc Dichotomization)

Variable	OR Scoring Not Satisfied Students vs Supervisor	95% CI	*p*
Overall satisfaction[a]	0.68	0.24–1.98	.48
Answers	0.48	0.15–1.54	.22
Information about condition	0.69	0.22–2.16	.52
Inquiry	0.69	0.10–4.97	.72
Preparation	0.80	0.35–1.83	.60
Staff is a relevant health care worker	0.17	0.03–0.79	.02
Time available	1.40	0.13–15.60	.78

[a] Primary outcome.

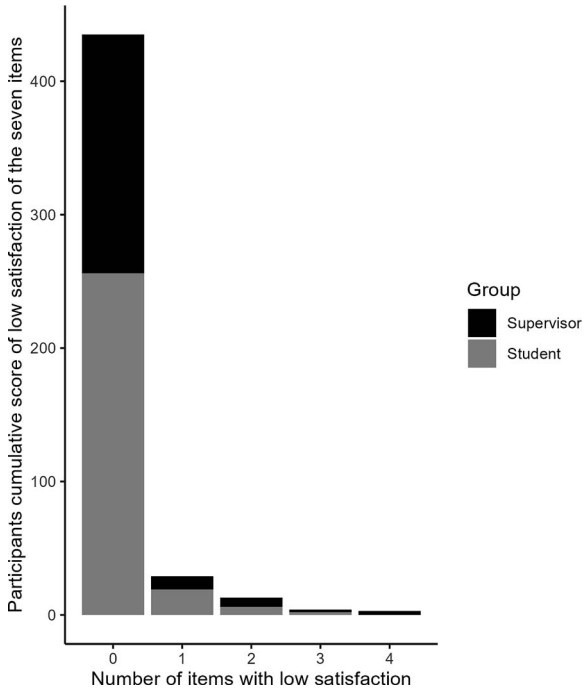

Figure 3 - Analysis of distribution across total number of low satisfaction scores per participant.

No meaningful difference in satisfaction, including overall satisfaction, was found across groups, as the disparity was below 5%. While this cut-point was arbitrary, we considered it a stringent threshold for a meaningful difference. Despite this, other departmental data from the LUP suggests that a difference of 5% or more across other types of categorization is common. Therefore, we are confident that our data do not support meaningful, relevant differences between groups.

The study found that participants with more anxiety, depression, or catastrophizing thoughts tended to be more satisfied with several items with students than supervisors, with odds ratios ranging from 0.34 to 0.63. We suspect this may be related to students affording more time for conversation and clinical examination of patients. Additionally, all the exploratory analyses investigating group allocation and the most commonly used patient-reported outcomes for spinal pain[40] provided no meaningful capacity to be predictive of patient satisfaction. Patient satisfaction appears to be related to the clinical consultation rather than the patient profile.

Our findings suggest that patient satisfaction is not affected by including chiropractic students in a hospital setting, at least for Danish chiropractic master students with a university background in a public government-funded spine center. Our students also complete short 4-week internships in orthopedic, rheumatological, and occupational medicine departments. Given the proper preparation, relevant hospital departments create a fertile teaching environment for chiropractic students. Other chiropractic teaching institutions should explore such opportunities in addition to the typical "teaching clinics."

Two authors (CN and SON) have been involved in the department's pre-graduate clinical training of chiropractic students for many years. Therefore, we attempted to avoid any sources of bias that could skew and invalidate our data: (1) The students/supervisor/patient allocation was handled administratively without

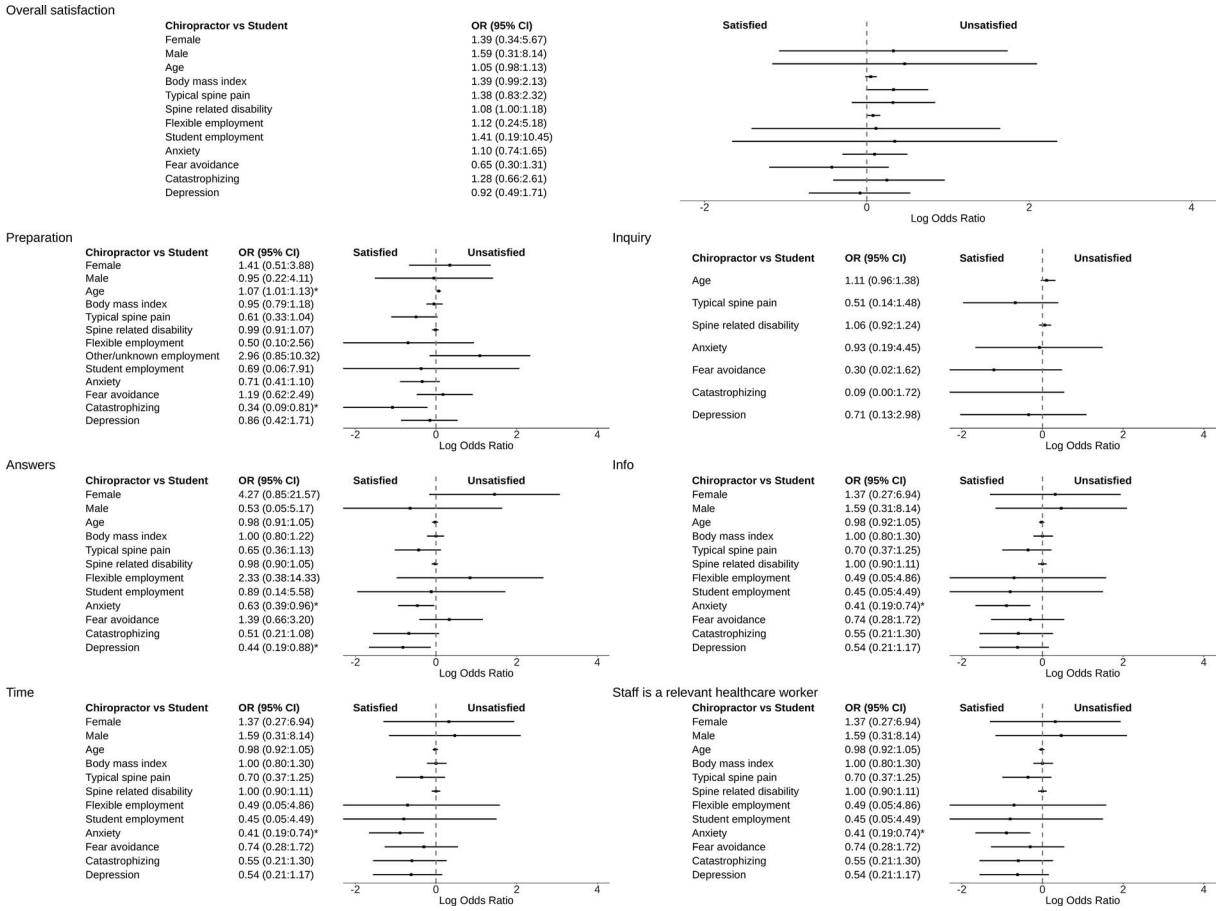

Figure 4 - Forest plot illustrating the odds ratios of scoring low satisfaction in the student group compared with the supervisor group considering baseline characteristics.

involvement from the researchers. (2) Participants were blinded to the aim of the study and completed the questionnaire privately. (3) The plan of statistical analyses and cut-points for clinical relevance were specified a-priori, and the statistical analyses were conducted blinded.

Selection bias may have been present in our study because many patients were not included or had missing data. Specifically, 266 patients were either not invited or did not submit the questionnaire. We lacked specific information regarding the reasons for their noninclusion. Further investigation and discussion with the clinicians revealed the unintentional omission of quite a few patients due to the occasionally hectic nature of clinical work. Notably, a higher proportion of patients were included when a student was present, as the student's presence functioned as an automatic reminder for the clinicians. Conducting research within a clinical setting poses inherent challenges, and our study was not exempt from these. As a result, it was impossible to collect data on those who chose not to participate systematically and their reasons for declining.

A controlled-randomized design was not feasible in our setting. Instead, patients were consecutively allocated according to the department's standard procedure. However, no discernible pattern was observed in the patient profiles, regardless of whether students were involved. Patients with more severe symptoms were inclined to decline participation or omit questionnaire responses. This could be attributed to inherent characteristics of these patients and is unlikely to impact the comparisons between the groups.

Nevertheless, a more rigorously designed randomized controlled trial is needed to investigate the actual impact of student supervision on patient satisfaction. To reduce recall bias, it may be beneficial to allow respondents to complete the questionnaire privately. Additionally, inviting patients through an external person not overseeing their care may potentially reduce observer bias. However, we did not take any specific measures to quantify or evaluate the extent of this reduction.

We restricted the questionnaire to the 7 most relevant LUP items, determined through an interdisciplinary consensus meeting. However, other aspects may be more relevant for some patients. Still, items excluded were primarily related to factors unrelated to the health care provider (eg, cleanliness and helpfulness from the reception).

We have limited knowledge of the psychometric properties of the LUP. Only preliminary work has been conducted. Female patients associate their rating with their experience, and selection is driven by care and human relations.[41] When comparing LUP to national questionnaires from Denmark Statistics, it appears that patient satisfaction is slightly exaggerated due to nonresponse.[42] Unfortunately, the lack of valid data is the norm in research investigating patient

satisfaction, as most surveys have not been validated for psychometric properties.[37]

Future research should develop and use validated questionnaires to explore patient satisfaction, and this could include acceptance across different types of procedures. Specifically, for chiropractic students in primary care, this could involve the application of physical therapies (eg, spinal manipulation) and secondary settings providing patients with paraclinical answers (eg, imaging findings) and design of the management plan going forward. Moreover, the Likert scale used in the LUP questionnaire is generic and refers to "staff" without explicitly mentioning chiropractors or students. Although the patients in this study only interacted with chiropractors and students, some patients may have interacted with the secretary or provided a general assessment rather than specifically evaluating the performance of the student or chiropractors. Finally, the comparable outcomes between patients treated by chiropractic students and licensed chiropractors may be influenced by patient's awareness of their care being supervised and authorized by a supervising chiropractor. This factor should be considered when designing future studies.

CONCLUSION

There were no perceived meaningful differences in patient satisfaction between patients receiving supervised care from a student vs a licensed chiropractor in this hospital setting. These findings are specific to our context but demonstrate the importance of empirically examining the consequences of student involvement in a clinical setting to address concerns and improve learning opportunities for future clinicians.

FUNDING AND CONFLICTS OF INTEREST

No funding was acquired to complete the study. CN, DSZ, and SON have supervised students for many years and are all active in the educational setup and teach in the program of Clinical Biomechanics at the University of Southern Denmark. Further, SON was the clinical coordinating lecturer in charge of the clinical internship for more than 10 years, and CN is the current clinical coordinator.

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Author Contributions

Concept development: CN, SON. Design: CN, AH, SON. Supervision: SON. Data collection/processing: CN, DSZ, AH, SON. Analysis/interpretation: CN, DSZ, AH, SON. Writing: CN, DSZ, SON. Critical review: CN, DSZ, AH, SON.

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