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Performance-based reimbursement, illegitimate tasks, moral distress and quality care in primary care: A mediation model of longitudinal data

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Abstract

Purpose: To test the direct and indirect effect that performance-based reimbursement (PBR) within primary care has on perceived individual and organizational quality of care, and the role of illegitimate tasks and moral distress as potential mediators.

Method: We used the Longitudinal Occupational Health survey in Healthcare Sweden with data collected in 2021, 2022, and 2023, including 454 Swedish primary care physicians. PBR was measured using a single item. The Bern Illegitimate Tasks Scale measured illegitimate tasks, and moral distress was measured with a 10-item scale. Six items from the English National Health Staff Survey were used to measure the quality of individual and organizational care.

Result: Of the 454 participants, 70.2% reported that PBR negatively impacted their work. PBR was negatively associated with illegitimate tasks (b, $-.160$ [CI, $-.240, -.080$]) and moral distress (b, $-.134$ [CI, $-.210, -.058$]), which in turn was associated with individual and organizational quality of care. Using mediation models, we found an indirect (b, $.011$ [CI, $.004, .021$]) but no direct (b, $.062$ [CI, $-.019, .143$]) effect between PBR on the quality of individual care.

Conclusion: PBR systems should account for the experience of individual primary care physicians to ensure effective, safe, and quality care, as this study shows how the level of illegitimate tasks and moral distress due to a PBR system can undermine care delivery. Consequently, it is imperative for stakeholders to consider how healthcare systems relate to the healthcare workforce's work experience, well-being, and the care being provided.

Keywords: Quality of care, Reimbursement, Primary health care, Physicians

Abbreviations

PBR: Performance-Based Reimbursement

PCP: Primary care physician

NPM: New Public management

PMMS: Performance measurement and management systems

SCB: Statistics Sweden

Introduction

New public management (NPM) is an approach to running public service organizations that embraces various performance monitoring regimes focused on quantifying outcomes.¹ For such healthcare organizations, effective and efficient quality of care is a key performance output that is regularly measured.²⁻⁴ In Sweden, the healthcare system is universal and publicly funded and is organized under 21 decentralized political assemblies that set the goal for healthcare organizations, including how these goals are measured.⁵ These goals are then operationalized through performance management and measurement systems (PMMS), which are processes designed to assess, analyze, and improve the performance of individuals, teams, departments, or entire organizations. However, there is growing criticisms about the lack of effectiveness of NPM,⁶ while little is known about the consequences of such systems on physicians' experience of work and on care outcomes.

One common form of PMMS is performance-based reimbursement (PBR).⁷ This is a control system where clinics are reimbursed for services provided, with the intention of providing effective and efficient care. In the Swedish context, PBR operates at the clinic level and is not a financial incentives system for individual physicians. However, PBR has been found to lead to shorter patient visit times and patient cream skimming (i.e., selecting low-risk or less ill patients).⁸⁻¹⁰ This has resulted in physicians arguing against PBR as it undermines existing medical standards, practices, and values.⁹⁻¹¹

The growth of PBR systems has been associated with increased formalization and bureaucratization,¹ leading to a large amount of work for the preparation and reporting of performance metrics,^{1,12} as well as physicians reporting less autonomy and poorer well-being.¹³ A qualitative study of Swedish physicians⁸ highlighted how PBR systems increased the amount of illegitimate tasks, which are tasks that fall beyond the scope of an employee's primary responsibilities and professional role (unreasonable tasks) or tasks that are not anticipated for a particular position (unnecessary tasks).^{14,15} In relation to PBR, these tasks include completing additional paperwork, registering

specific details and diagnoses onto data systems, booking separate consultations for separate conditions with the same patient, and having to see patients whom a nurse could treat.⁸

Within a PBR system, increases in illegitimate tasks reduce the time available for actual clinical work,⁸ which could engender a feeling of moral distress. This refers to feelings of stress or guilt due to forced unethical decisions.^{16,17} Although long recognized in the healthcare sector, moral distress has gained substantial traction during the COVID-19 pandemic.^{18,19} However, the focus has primarily been on the demands from trauma exposure not allowing for individuals being able to give the level of care that one would want.¹⁹ In this study, we apply moral distress to the context of PBR, responding to calls to examine moral distress in relation to business and corporate structures.²⁰ The reduced time spent on core clinical tasks at the expense of administrative tasks (i.e., more illegitimate tasks)^{21,22} could engender feelings of moral distress due to one being unable to provide the care that one should to the patients in most need, that in turn, undermines the belief in the quality of care one provides.^{23,24}

While moral distress has been postulated to be linked to patient care,^{16,18,25} to date, there has been limited empirical testing of this relationship. One cross-sectional study that tested this reported no association between moral distress and satisfaction with care quality among hospital physicians.²⁶ However, the quality of care measure in this study contained items pertaining to both care provided by the individual and the unit. As moral distress is closely linked to an individual's appraisal of their personal situation and control of it,¹⁷ the appraisal of their own behaviors is much more proximal than outcomes at the unit level – which could be reliant on the actions of others.^{27,28} However, a negative appraisal of PBR and its corresponding impact on increasing illegitimate tasks and feelings of moral distress could also strengthen the belief that the potential within the clinic is not being utilized and that this disadvantages patients and colleagues, which would undermine the level of care provided at the organizational level.

Growing evidence attests to the link between physicians' poor working conditions and low standards of care being provided, which have been attributed to poor safety culture and the drawing away of resources and attention from care.²⁹⁻³¹ However, as the wider healthcare organizational system and structure have been positioned as an antecedent to the working conditions of the individual physicians and their well-being,^{28,32} it is plausible to position PBR as an antecedent to the working experience of physicians to address the gaps identified above. In doing so, we use a longitudinal cohort design to test the interrelationships between PBR, quality of care, illegitimate tasks, and moral distress. This design accounts for the typical lag that the working environment has on worker health and patient care.³¹ Here, we distinguish between the care physicians perceive they provide themselves versus the quality that physicians perceive their organization provides.²⁷ This is to examine if there may be a difference in how PBR systems (at the organizational level) and moral distress and illegitimate tasks (at the individual level) relate to the perception of care across different levels. Therefore, in this study, we test the direct and indirect effect of performance-based reimbursement systems on the perceived quality of care provided by the individual and the organization, where illegitimate tasks and moral distress are positioned as mediators.

Figure 1 here

Methods

The data was drawn from the Longitudinal Occupational Health survey in Healthcare Sweden (LOHHCS).^{8,33} Statistics Sweden (SCB) was responsible for sampling and data collection. Between March and May 2021 (T1), SCB sent a survey invitation to a national representative sample of physicians (N=6699) listed in the Swedish Occupational Registers in 2020 of which 3259 (48%) were registered to work in primary care. Of the responding physicians (n=2761, response rate=41.2%), 1013 reported that they worked in primary care at T1 (an approximate response rate of 31.1%). More details of T1 data collection is available elsewhere.³³ Follow-up surveys were administered in

the same cohort of physicians (excluding those who retired, died, or migrated during the study period) from March to May 2022 (T2) and October to December 2023 (T3). At each time point, SCB sent an initial postal invitation letter with credentials to log in to a web survey hosted by SCB. Three reminders were sent to those who had not responded. With the second reminder, a paper version of the survey was included.

In total, 454 physicians reported working in primary care at all three time points. We further restricted respondents to those under the retirement age (68 years), resulting in a final sample of n=433. Comparisons by SCB show no systematic differences between the missing data in the sample and that of the population. The study sample included a larger share of female PCPs than males (61.9% and 38.1%, respectively). At baseline, the mean age was 45. Thirty-six-and-a-half percent had up to 10 years of experience working as physicians, 23.8% had between 10 and 15 years of experience, and 39.7% had more than 15 years. The largest share of the responding PCP reported working less than 40 hours a week (53.5%), and while 30.6% reported working between 41 and 45 hours per week.

Measurements

PBR was measured at T1 using a single item asking the respondents to rate if the PBR system impacts them positively or negatively, with answers on a four-point scale ranging from “very negative” to “very positive”. The development of the PBR question is described elsewhere.⁸ Participants who responded that they were not affected by PBR were computed as the middle value. This resulted in a five-value item where the middle value represented those not affected by PBR (i.e., neutral), while a high value indicated a positive impact from PBR and a low value indicated negative impact.

Illegitimate tasks and moral distress were measured at T2. For the former, we used the eight-item Bern Illegitimate Tasks Scale.¹⁵ This was rated on a five-point Likert scale where a higher value

indicates more illegitimate tasks, and a grand mean was computed (α , .84). We measured moral distress using an instrument first developed for Norwegian physicians,³⁴ which we translated into Swedish by a bilingual individual who has worked in both the Norwegian and Swedish healthcare system. Respondents rated ten items as to how stressful each item was on a four-point Likert scale (0, not at all; 3, very stressful). A grand mean was computed across all ten items where a higher value indicated more stress (α , .85). Earlier studies using these measures of moral distress³⁹ and illegitimate tasks⁸ in the Swedish context support their criterion validity.

At T3, we measured quality of care using six items from the English National Health Staff Survey^{27,35} that were translated into Swedish by a bilingual individual with knowledge of both healthcare contexts. These are separated into two dimensions of three items, each related to the perceived quality of care provided by the individual (e.g., “I am able to deliver the patient care I aspire to”; α , .82) and by the organization (e.g., “If a friend or relative needed treatment, I would be happy with the standard of care provided by this organization”; α , .71). Responses to each item was on a five-point Likert scale (1, strongly disagree; 5, strongly agree) and a grand mean was calculated for each dimension where a higher score represents better perceived quality of care.

Gender and age at T1 were included as covariates and were retrieved from the Longitudinal Database on Education, Income, and Occupation at Statistic Sweden. We also included quantitative demands as a covariate, given its strong influence on the constructs within the study.^{31,36} This was measured at T1 using three items (α , .88) from the third version of the Copenhagen Psychosocial Questionnaire.³⁷ All reliability tests showed that the respective construct had a Cronbach’s Alpha above 0.70, indicating good to high internal consistency.³⁸

Analytical strategy

Data analysis was carried out using SPSS Statistics for Windows version 28.0. To test for serial mediation, we used Model 6 of the PROCESS macro v4.2⁴⁰, where PBR (T1) was the predictor variable, and illegitimate work tasks and moral distress were mediators (T2). Two separate models were run, one for each of the quality-of-care construct (T3). We used a calculation of 5000 bias-corrected bootstrapped 95% confidence intervals to test the indirect associations of both mediators. Participants' age, gender, and quantitative demands were included as covariates.

Results

Of the 433 PCPs who responded at all three survey points, 1 (0.2%) reported that the PBR system very positively impacted them, while 29 (6.9%) reported a positive impact. In contrast, a much higher proportion of participants responded that the PBR negatively ($n = 249$; 58.9%) or very negatively ($n = 52$; 12.3%) impacted them. The remaining 92 (21.7%) participants reported no impact from the PBR system. In Table 1, we present mean values, standard deviation (SD), and range for the included variables.

Table 1 here

Complete serial mediation was observed between PBR and the quality of individual care provided by the individual PCP, adjusting for age, gender, and quantitative workload (Table 2). The results show an indirect effect of PBR on the quality of individual care via illegitimate work tasks and moral distress ($b, .011$ [CI, .004 to .021]), although there was no direct effect of PBR on the quality of individual care ($b, .062$ [CI, -.019 to .143]). PBR did negatively predict illegitimate work tasks ($b, -.160$ [CI, -.240 to -.080]) and moral distress ($b, -.134$ [CI, -.210 to -.058]). In addition, illegitimate work tasks ($b, -.229$ [CI, -.326 to -.132]) and moral distress ($b, -.203$ [CI, -.300 to -.106]) had a direct effect on the quality of individual care provided. Table 2 presents the mediation summary.

Table 2 here

No serial mediation was observed where the quality of organizational care was the outcome variable (b, .004 [CI, -.001 to .015]) adjusting for age, gender, and quantitative workload. Again, there was no direct (b, .055 [CI, -.039 to .149]) effect between PBR and the quality of care provided by the organization. However, unlike the quality of individual care, there was also no relationship observed between moral distress and the quality of organizational care (b, -.109 [CI, -.225 to .008]). Table 2 does show that there was an indirect effect between PBR and the quality of organizational care through illegitimate work tasks (b, .046 [CI, .019 to .077]).

Discussion

Providing high-quality care is a key aspect of healthcare services. This three-wave longitudinal study shows that PBR negatively impacts perceived quality of care via illegitimate tasks and moral distress in Swedish primary care. From a clinical perspective, the results demonstrate the pathways by which organizational processes and systems are associated with the care that is being provided within primary care.

The findings raise concern that despite the supposed benefits of new public management within public organizations in Sweden to increase internal and external efficiency,^{41,42} it may actually be detrimental to the working experience and well-being of PCPs and, ultimately, undermine the perceived care being provided. Although PBR systems are salient to healthcare provision and are known to increase physicians' administrative work,⁸ few studies, if any, have explored PBRs' impact on perceived quality of care. Our findings, therefore, emphasize that organizational targets and goals must be grounded in medical practices at the operational level and that indications of "success" have to encompass a broader perspective accounting for both staff experience and patient care.^{28,43} As

such, quality of care must be viewed in the context of organizational demands and PCPs' preconditions to carry out clinical work.

Our results should be viewed against the backdrop of an increase in unreasonable and unnecessary work for PCPs over the recent decades.^{44,45} These not only have a compounding effect of increasing the quantitative workload of PCPs but also function to increase levels of moral distress among physicians who do not feel able to provide the levels of care that they should be providing. This pathway of PBR systems, illegitimate tasks, moral distress, and perceived quality of care is congruent with the theoretical^{46,47} and empirical^{31,48} literature advocating a link between the organizational system and outcomes. While this study focused on the perceived quality of care, illegitimate tasks and moral distress are central aspects of healthcare workers' work environment that are also related to burnout, sickness absence and turnover.^{22,49,50} Although beyond the remit of this study, it does raise the question of how PBR systems may impact upon other measures of importance involving the healthcare workforce. This may cause a vicious circle, where the PBR-related administrative work leads to poor working conditions and well-being and subsequent sickness absence and turnover, which in turn increases the administrative work on the physicians that remain.

This study also raises the question of the suitability of current processes to monitor, manage performance and measure quality in healthcare. Traditionally, healthcare quality has been measured by population health, care experiences, and low costs.⁵¹ This was later expanded to the quadruple aim, including physicians, and other healthcare workers, well-being.^{43,52} While these aims fill an important role in healthcare, they disregard the significance, impact, and state of physicians' working conditions.^{27,32,43} It is thus clinically relevant to acknowledge system-level structures and processes that impact PCPs work. Future studies should continue to research how various PMMS impact PCPs working conditions and quality of care.

Limitations

The findings of this study must be considered against several limitations. First, attrition over the study period needs to be addressed. In total, 1510 physicians answered the survey at all three time points, which is 22.5% of the T1 sample (n=6699) and 54.7% of the T1 respondents (n=2761). Drop-outs can be derived from individuals moving out of the labor market due to, e.g., death, migration, pensions, parental leave, or illness or that they changed jobs to work outside of healthcare. In addition, by including only those who worked in primary care facilities for the full study period, we need to account for individuals who may have moved to other clinics or onto staff agencies.

However, it is important to note that the response rates observed are in line with studies with similar samples^{53–55} and that SCB analyzed missing data at T1 comparing the sample to the population and found no systematic differences.

Second, self-report surveys risk response and recall biases, although our use of longitudinal data at three time points limits the risk of common method bias. Third, PCP's rating individual and organizational quality care is both a strength and a limitation. Previous research has pointed out the need to encompass healthcare workers' perspectives on quality care.²⁴ However, perceived quality of care may be affected by an individual's state of mind or level of stress, and the evidence of its relationship with actual patient care outcomes remains inconsistent.²⁸ The measure of quality of care has also not been validated in the Swedish context, and studies like this are important to support its use in Sweden. Finally, PBR was measured using a single question that assesses participants' general assessment of its impact. Using additional items that are less evaluative and more descriptive could yield a more valid representation of the construct. In addition, to obtain a PBR score, we recorded participants' responses on two separate items. A clearly labeled five-point scale where the middle number is labeled as not being affected would have improved the validity of the item and possibly reduced the positive skew within the distribution.

Conclusion

This longitudinal three-wave survey of 433 physicians shows that PBR in Swedish primary care indirectly impacts subsequent perceived poor individual and organizational quality of care. Further, the level of illegitimate tasks and moral distress due to a PBR system can undermine care delivery. The clinical implication of this study is that quality of care is not limited to best practice and evidence-based medicine but relies on PCPs work systems to perform care.

In practice, it would be desirable that the use of PBR account for the experience of individual PCPs to ensure good quality care. The identification of illegitimate tasks and moral distress as potential mediators present targeted intervention opportunities to support the better implementation of PBR and mitigate any detrimental effects. For example, intervention studies to reduce bureaucracy, and non-core tasks have been found to improve healthcare workers' well-being.⁵⁶ Overall, it is imperative for stakeholders across the political and healthcare management sphere to consider how healthcare systems relate to the healthcare workforce's work experience, well-being, and the care being provided.

Conflict of Interest Disclosures

Authors have no conflict of interest to declare.

Ethical statement

Participant consent: All study participants were informed that participation was voluntary and they could drop out anytime. They agreed to participate by answering and submitting the survey.

Ethics approval: The Swedish Ethical Review Authority reviewed and approved this study (Dnr: [redacted]).

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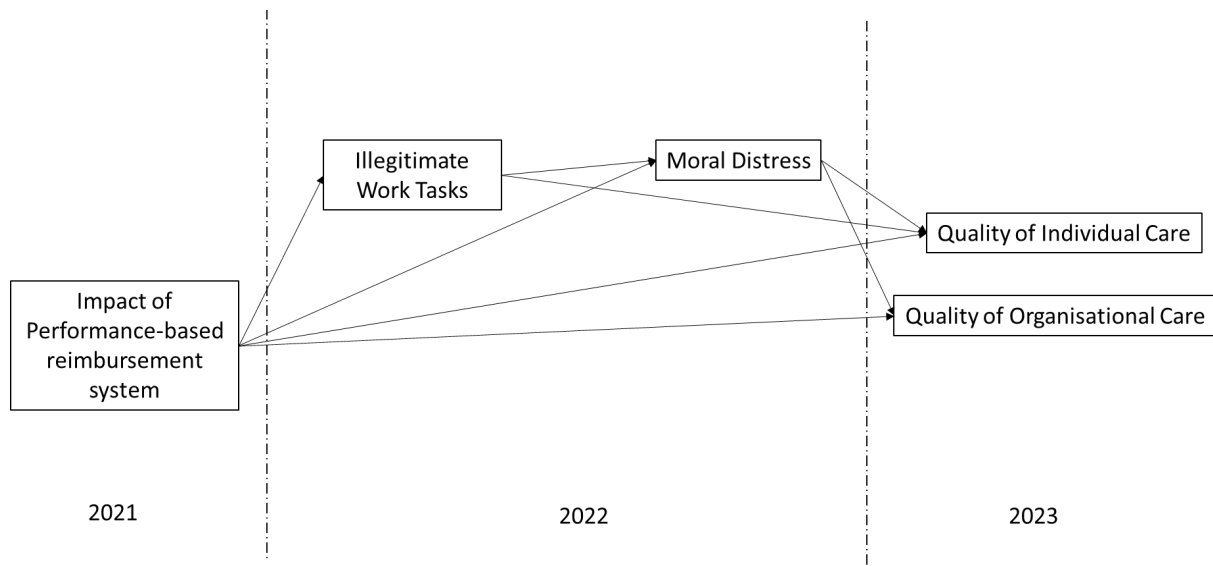


Figure 1. Study model of the direct and indirect effects between the impact of the PBR systems on quality of care

Table 1. Descriptive statistics for the included variables

Measurement	Range	n	Mean (SD)
PBR System	1-5	423	2.24 (0.76)
Illegitimate tasks	1-5	431	3.15 (0.66)
Moral distress	0-3	425	1.58 (0.66)
Quality of Individual Care	1-5	429	3.82 (0.63)
Quality of Organizational Care	1-5	426	3.70 (0.73)
Quantitative demands	1-5	427	3.39 (0.91)
Age	28-67	433	45.16 (11.21)

Abbreviations: PBR, Impact of Performance-based Revenue System

Table 2. Direct and indirect effects between impact of PBR system on quality of care

Relationships	Relationship	Quality of Individual Care				Quality of Organisational Care			
		Effect ^a	LLCI	ULCI	t	Effect ^a	LLCI	ULCI	t
Direct Effect	PBR -> QoC	-.013	-.091	.066	-0.317	.055	-.039	.149	1.144
Total effect	PBR -> QoC	.062	-.019	.143	1.522	.121	.026	.216	2.512
Indirect effect	PBR -> IWT -> MD -> QoC	.011	.004	.021		.006	-.001	.015	
Indirect effect	PBR -> IWT -> QoC	.075	.041	.112		.046	.019	.077	
Indirect effect	PBR -> MD -> QoC	.027	.001	.049		.015	-.001	.015	

Abbreviations: PBR, Impact of Performance-based Revenue System; QoC, Quality of Care; IWT, Illegitimate work tasks; MD, Moral distress; LLCI, Lower level of the 95% confidence interval; ULCI, Upper level of the 95% confidence interval.

a Adjusted for age, gender, quantitative workload.