Mapping general practitioners’ motivation: It is not all about the money. A nation-wide cross-sectional survey study from Denmark

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Title: Mapping general practitioners’ motivation: It is not all about the money. A nation-wide cross-sectional survey study from Denmark

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Ethical approval: Complying with European data protection rules, the Research & Innovation Organisation at University of Southern Denmark registered the data processing activities for this project on behalf of the Danish Data Protection Agency (file number 10.482). The Regional Scientific Ethical Committees for Southern Denmark assessed the study and concluded that no further ethical approval was needed cf. section 14, subsection 1 in the Act on Research Ethics Review of Health Research Projects (file number 20192000-99).

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Mapping general practitioners’ motivation: It is not all about the money. A nation-wide cross-sectional survey study from Denmark

Abstract

Background: Understanding physicians’ motivation may be essential for policymakers if they are to design policies that cater to physicians’ wellbeing, continuation in the job, and quality of care. However, physicians’ motivation remains an understudied area.

Aim: This study maps general practitioners’ (GPs’) work motivation.

Design and Setting: Using data from a survey sent to all Danish GPs in 2019, we measure four types of work motivation: extrinsic motivation, intrinsic motivation, user orientation, and public service motivation. We combine these measures of motivation with register data on GP, practice, and area characteristics.

Methods: Using latent profile analysis, we explore heterogeneity in GPs’ motivation. We estimate the associations between GPs’ motivation and GP, practice, and area characteristics using linear regression analyses.

Results: We reveal substantial heterogeneity in GPs’ motivations. We identify five classes of GPs with different work motivations. Class 1 (class probability of 53.2%) ‘it is less about the money’, class 2 (26.5%) ‘it is about everything’, class 3 (8.6%) ‘it is about helping others’, class 4 (8.2%) ‘it is about the work’, and class 5 (3.5%) ‘it is about the money and the patient’. Linear regression analyses show that motivation is only to a limited extent associated with GP, practice, and area characteristics.

Conclusion: GPs differ in their work motivations. Our finding that ‘it is not all about the money’ for many GPs indicate that GPs’ different motivations should be considered when designing new policies and organisational structures to retain GPs and ensure a high quality of care.

Keywords: General practice; Prosocial motivation; Self-centred motivation; Denmark

How this fits in: Understanding physicians’ motivation may be essential for designing policies and organisational structures that ensure the wellbeing and retention of GPs, and high-quality care. However, physicians’ motivation remains an understudied area. We find heterogeneity in GPs’ work motivation and identify five GP segments. The largest segment (53.2%) is characterised by being motivated ‘less by the money’.
**Introduction**

Worldwide there is a physician shortage,\(^1\)–\(^3\) while physicians’ wellbeing is being challenged.\(^4\)–\(^6\) Literature reviews show that physicians’ wellbeing is associated with retention\(^7\)–\(^10\) and quality of care.\(^11\),\(^12\) A key to fostering physicians’ wellbeing may be to understand their work motivations. Literature outside of healthcare acknowledges that motivation is important for performance.\(^13\)–\(^17\) However, physicians’ motivation remains an understudied area. This study aims to map general practitioners’ (GPs’) motivation in the Danish setting.

We focus on four key dimensions of motivation, which may influence GPs’ wellbeing and behaviour.\(^18\)–\(^22\) These are extrinsic motivation (EM), intrinsic motivation (IM), user orientation (UO), and public service motivation (PSM). EM and IM are so-called self-centred motivations. Individuals who are extrinsically motivated engage in activities due to the presence of tangible incentives,\(^20\) whereas those who are intrinsically motivated engage in activities because of a genuine interest and enjoyment in the work.\(^23\) UO and PSM are prosocial motivations reflecting the wish to exert effort to benefit others,\(^22\),\(^24\),\(^25\) which relates to the concept of altruism.\(^25\),\(^26\) Individuals who are user orientated deliver services with the purpose of doing good for specific others (patients),\(^21\) whereas those who are public service motivated deliver services in order to do good for society.\(^27\)

Agency theory,\(^18\),\(^28\),\(^29\) represents a theoretical justification for focusing on GPs’ self-centred and prosocial motivations. The theory shows trade-offs between the agents’ (GPs’) self-centred interests (EM and IM) and altruistic concerns (UO and PSM) towards their principals (patients and society). According to this theory it is important to know whether GPs are primarily incentivised by tangible rewards such as money (EM), by own professional interests (IM), by improving patients’ health benefits (UO) or by delivering cost-effective treatments to society (PSM), if policymakers are to ensure the wellbeing of GPs and design policies that generate the intended responses.

Empirical evidence on healthcare providers’ motivation mainly focuses on a limited range of motivational components\(^16\),\(^20\),\(^21\),\(^30\) and rarely on GPs.\(^19\),\(^26\),\(^31\),\(^32\) Sicic et al.\(^32\) find a negative relationship between EM and IM among French GPs. Pedersen et al.\(^31\) find evidence of crowding-in of IM among Danish GPs being accredited. Pedersen et al.\(^19\) find that risk of burnout when accredited is linked to high IM amongst Danish GPs. Jensen and Andersen\(^26\) find that Danish GPs with high PSM prescribe less broad-spectrum antibiotics, while GPs with high UO prescribe more antibiotics. Supplementary Box S1 describes how the motivational components have been used in the broader literature. The limited evidence indicates how motivation may be important for GP wellbeing and behaviour and can be impacted by policies. However, more evidence is needed.

We contribute to the literature in several ways. First, we uncover heterogeneity in GPs’ motivation using descriptive statistics. Second, we uncover the interdependence of different types of motivation using Pearson’s correlation coefficients. Third, we identify segments of GPs based on their motivation using latent profile analysis. Fourth, we estimate the associations between GPs’ motivation and GP, practice, and area characteristics using linear regression analyses. Knowledge about the heterogeneity of motivations (including the segments of GPs) can guide how motivations should be considered when designing policies to retain GPs and ensure quality of care. For example, GPs who are more
public service motivated may be more responsive to guidelines, whereas GPs who are more extrinsically motivated may respond more to tangible incentives such as bonuses. GPs who are more user oriented may be more dissatisfied if work pressures impact the provided quality of care, whilst GPs who are more intrinsically motivated may feel that pressure deters professional curiosity. Knowl. about the interdependence of the motivations uncovers if policies need to target them separately. Information about the associations between GP motivation and observable characteristics provides insight into potentials for targeting specific groups’ motivation when designing policies.

Methods

Institutional setting

In 2019, around 3350 GPs were registered in 1720 single-handed or partnership practices in Denmark. GPs are self-employed and work under contract with the Danish Regions (prompting their PSM). One-third of their income comes from capitation and two-thirds from fee-for-services (there is no pay-for-performance). These payments are the GPs’ main tangible incentives prompting their EM. The institutional setting thereby supports the importance of studying our key motivational components.

Data

We use data from the Danish national GP work life survey from 2019. The primary objective of the survey was to collect data on motivation. All 3336 privately practicing GPs registered with a practice provider number in the Danish Health Authorities’ Organisation Register in the beginning of 2019 received an invitation. The survey includes items measuring EM, IM, UO, and PSM (see Supplementary Table S2.1 for a description). We use the GPs’ authorisation ID and postal codes to link survey data on motivation to high-quality register data on GP, practice, and area characteristics (see Supplementary Box S3.1 for further details).

Empirical approach

Constructing simple sum scores for the motivational components: We use confirmatory factor analyses to investigate how each survey item contributes to the latent constructs of the four components. We follow Pedersen et al. and construct a single sum score for each component. For each item we convert the 5-point Likert scales to a numeric scale by assigning numbers one for ‘completely disagree’ to five for ‘completely agree’. We then add the numbers within each motivational component. We standardise the scores to range from 0-100 using the min-max approach. Zero indicates the lowest observed value (the least motivated GPs), while 100 indicates the highest observed value (the most motivated GPs) for each motivational component (see Supplementary material 4 for further details).

Exploring heterogeneity in GPs’ work motivation: We present descriptive statistics using a violin plot to explore variation in the motivational components. We refrain from comparing across components as they are measured using different items.

Exploring interdependence between motivational components: We estimate Pearson’s correlation coefficients between the four motivational components to investigate their interdependence.
Identifying segments of GPs: We use latent profile analysis to identify segments of GPs based on their motivations. To identify which motivational components are predominant in each class, we compare the coefficients in each class to the overall sample mean within each component and test whether they are statistically significantly different (see Supplementary Box S5.1 for a specification of the model).

Associations between motivation and GP, practice, and area characteristics: We use ordinary least squares regression models where standard errors are clustered at practice level to investigate whether GP motivation is associated with GP, practice, and area characteristics. We measure motivation as 1) GPs’ individual probabilities of class membership for each class identified in the latent profile analysis, and 2) the GPs’ score on each motivational component, while controlling for other motivational components (see Supplementary Box S5.2 for specifications of the models). Supplementary material 10 describes our supplementary analyses.

Results

A total of 1152 GPs completed the survey, corresponding to a response rate of 34.5%. The responding GPs are to a large extent representative of the GP population in Denmark. Responders’ practices are to a higher extent located in the Region of Southern Denmark and the Central Denmark Region (see Supplementary Table S6.1).

Exploring heterogeneity in GPs’ motivation

Figure 1 illustrates heterogeneity in the motivational components. The standard deviations range between 15 to 23 (see Supplementary Table S7.1). EM, UO, and PSM are distributed fairly symmetrical, with UO and PSM approximately following a normal distribution. IM is skewed to the left, while EM has a bimodal distribution, indicating that there are two groups of GPs with different levels of EM.

[Figure 1 around here]

Exploring interdependence between motivational components

Table 1 shows that there is a low correlation between the motivational components (defined as below ±0.338). This result indicates that the components do not explain the same type of motivation.

[Table 1 around here]

Identifying segments of GPs

Figure 2 visualises the results from the latent profile analysis (Supplementary Table S8.2 presents the estimates). Based on the fit statistics (see Supplementary Table S8.1) and interpretability of the classes, we choose the five-class model. Class 1 (probability of class membership 53.2%) ‘It is less about the money’ is characterised by IM, UO, and PSM being at or above the GP mean, while EM is statistically significantly below the mean. Class 2 (26.5%) ‘It is about everything’ is characterised by all motivations being at or above the GP mean. Class 3 (8.6%) ‘It is about helping others’ is characterised by EM and IM being statistically significantly below the mean, and UO and PSM being at the mean. Class 4 (8.2%) ‘It is about the work’ is characterised by EM, UO, and PSM being statistically significantly below the mean, and IM being at the mean level. Class 5 (3.5%) ‘It is about
the money and the patient’ is characterised by IM and PSM being below the mean, and EM and UO being at or above the mean.

[Figure 2 around here]

Associations between GPs’ motivation and GP, practice, and area characteristics

Supplementary Table S9.1 reports the associations between GP, practice, and area characteristics and individual probability of class membership (left-hand side of table) or GPs’ motivational scores (right-hand side). The observable characteristics are only to a limited extent associated with GP motivation. Specifically, they explain between 0.3% and 3.1% of the variation in the individual probability of class membership and between 3.5% and 5.7% of the variation in the motivational scores. Male GPs seem to be more extrinsically and pro-socially motivated compared to female GPs who are more intrinsically motivated. Younger GPs tend to be less pro-socially motivated than older GPs. The results from the supplementary analyses support our main analysis (Supplementary Tables S10.1-S10.6).

Discussion

Summary

We find heterogeneity in GPs’ motivation within all motivational components. Interestingly, the distribution of EM is bimodal, suggesting that there are two groups of GPs in our sample for whom tangible incentives are not equally important. We further find that the four motivational components are only weakly correlated with each other. We identify five classes of GPs with different motivational profiles. Class 1 (class probability: 53.2%) ‘it is less about the money’, class 3 (8.6%) ‘it is about helping others’, and class 4 (8.2%) ‘it is about the work’ are characterised by being less extrinsically motivated relative to the mean. GP, practice, and area characteristics are only to a limited extent associated with motivation.

Strengths and limitations

To the best of our knowledge, this study is the first to map physicians’ motivation using four motivational components reflecting complementary key areas of motivation. We utilise self-reported measures of motivation and combine these measures with high-quality register data on GP, practice, and area characteristics. Our results may be generalisable to privately practicing GPs in high-income countries with systems following the Beveridge model (for example England and Norway). However, as this study is the first to comprehensively map physicians’ motivation, more research is needed to verify the generalisability of our findings. For example, whether our findings apply to GPs in systems following other types of healthcare models, low- and middle-income countries, and to other types of healthcare providers. More knowledge is also needed about whether motivational profiles are stable across time and contexts. We cannot rule out that classic biases such as self-selection bias, social desirability bias, or strategic bias may be present in our study. However, we believe that the problem is minimal. A large share of the GPs responded, which reduces the risk of self-selection bias. Responses were provided anonymously, which reduces risk of social desirability bias. Also, we find heterogeneous motivation across GPs, also in EM where social desirability bias may be most
pronounced. Finally, the questions were not posed in relation to any specified political agenda. We therefore do not think that the GPs acted strategically.

Comparison with existing literature

We find that the motivational components are only weakly correlated with each other. This finding aligns with Sicsic et al.\textsuperscript{32} and Dill et al.\textsuperscript{30}, who studied EM and IM among French GPs and American hospital nurses, respectively, and Jensen and Andersen\textsuperscript{26} who studied UO and PSM among Danish GPs. A systematic review by Marchand and Peckham\textsuperscript{3} shows that tangible incentives, such as money, are less important than other motivational factors for GP recruitment and retention. This result is aligned with our finding that more than half of GPs belong to a segment where EM is less important. Although only a few other studies have examined GPs’ motivation using the same motivational components as in our study,\textsuperscript{19,26,31} other studies have explored specific GP motives that could constitute dimensions under our general measures of motivation. For example, studies find that some GPs value flexibility in their work,\textsuperscript{42} indicating a need for autonomy which is a typical trait among GPs with high levels of IM.\textsuperscript{33,34} Other studies find that GPs engage in teaching for different reasons. Some GPs simply enjoy teaching (IM), while others desire to update their clinical knowledge to help patients (UO), and others again think it is a responsibility to the community (PSM).\textsuperscript{43}

Implications for research and practice

Understanding GPs’ motivation could help ensure GPs wellbeing and solve issues with GP shortages and quality of care.\textsuperscript{1–6} If decisionmakers include this knowledge in their planning of general practice, they may reduce GP shortage by retaining or recruiting GPs. This may require a flexible general practice organisation, where GPs can self-select into contracts differing in terms of employment (salaried vs. privately practicing), degree of patient contact, and in opportunities to engage in activities for the benefit of society or their own professional interests.

Literature outside of the healthcare setting has shown that motivation is important for workers’ performance.\textsuperscript{13–17} It is therefore likely that the heterogeneity in GPs’ motivational profiles may explain variation in their treatment behaviour, beyond what has been shown for prescriptions of antibiotics.\textsuperscript{26} Such variation could lead to differences in quality of care and inequality in access to care.\textsuperscript{44} Future research should therefore investigate the relationship between GPs’ motivations and treatment behaviour.

The low correlation between the motivational components suggests that they measure different aspects of motivation. Thus, incentive schemes may be more effective if they target different types of motivations. Our findings may thereby explain why other studies find that GPs do not always respond to financial incentives.\textsuperscript{45–47} Similar to conclusions by Lagarde et al.,\textsuperscript{48} we suggest that GPs who are not highly extrinsically motivated may respond better to incentives targeted the other motivations. Policymakers should therefore consider using a mix of financial and non-financial incentives. Studies exploring how different types of incentives link to GPs’ care and their motivational profiles are warranted.\textsuperscript{49}
Although we do find some statistically significant associations between GPs’ motivation and their age and gender, these characteristics seem not to be strongly associated with motivation. We therefore suggest that GPs’ motivation is taken into consideration, in addition to these other observable characteristics, when designing policies.
References


22. Grant AM. Relational job design and the motivation to make a prosocial difference. AMR. 2007;32(2):393–417.


48. Lagarde M, Huicho L, Papanicolas I. Motivating provision of high quality care: it is not all about the money. BMJ. 2019;l5210.

http://dx.doi.org/10.2139/ssrn.4014316
Figure 1. Violin plot showing variation in GPs’ standardised simple sum scores across motivational components. The circle indicates the median, the black box indicates the interquartile range, spikes indicate the upper- and lower- adjacent values, and the shaded area indicates the kernel density distribution. The y-axis displays a standardised score going from zero representing the least motivated GPs to 100 representing the most motivated GPs. EM: Extrinsic motivation; IM: Intrinsic motivation; UO: User orientation; PSM: Public service motivation.
Table 1
Pearson’s correlation coefficients between the four motivational components.

<table>
<thead>
<tr>
<th></th>
<th>Extrinsic motivation</th>
<th>Intrinsic motivation</th>
<th>User orientation</th>
<th>Public service motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extrinsic motivation</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic motivation</td>
<td>-0.037</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(0.213)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User orientation</td>
<td>0.116*</td>
<td>0.039</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>(&lt;0.001)</td>
<td></td>
<td>(0.191)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public service motivation</td>
<td>-0.059*</td>
<td>0.166*</td>
<td>0.119*</td>
<td>1.000</td>
</tr>
<tr>
<td>(0.044)</td>
<td>(&lt;0.001)</td>
<td>(&lt;0.001)</td>
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</table>

Notes: *p < 0.05. P-values in parentheses.
Figure 2. Bar chart showing class composition and mean standardised simple sum scores of the four motivational components across the five classes. The five classes are listed on the x-axis with probability of class membership in parentheses. The horizontal bars indicate the mean score for all GPs for each of the motivational components. The horizontal bars are shaded if there is a statistically significant (p<0.05) difference between the mean score for all GPs and the mean class score (tested using an unequal variance t-test). The y-axis gives a standardised score going from zero representing the least motivated GPs to 100 representing the most motivated GPs. EM: Extrinsic motivation; IM: Intrinsic motivation; UO: User orientation; PSM: Public service motivation.