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Knockin' on Employment's Door: The Power of Caseworker Beliefs on Job and Health Outcomes for the Long-Term Unemployed

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ABSTRACT

Knockin' on Employment's Door: The Power of Caseworker Beliefs on Job and Health Outcomes for the Long-Term Unemployed*

This study examines the impact of caseworker beliefs on employment and health outcomes among long-term unemployed social assistance recipients in Denmark. Exploiting as-if random caseworker assignment, an instrumental variables approach, and a novel measure of “Caseworker Job Orientation”, we estimate the effects of caseworkers’ job beliefs regarding their clients. Results indicate that clients assigned to caseworkers with stronger innate job beliefs experience substantial improvements in employment rates, earnings, and educational enrollment. Additionally, positive effects on health are observed, particularly among clients with pre-existing health conditions. These findings underscore the role of caseworker attitudes in shaping client trajectories, offering policy insights into enhancing labor market re-entry strategies.

JEL Classification: J68, I38, J65, C26, C93

Keywords: caseworker beliefs, long-term unemployment, employment outcomes, health outcomes, social assistance

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1 Introduction

Addressing long-term unemployment remains a critical challenge in labor economics and public policy, given its persistently high incidence across countries and the profound individual and societal costs associated with prolonged joblessness (Ljungqvist and Sargent, 1998; Kroft et al., 2016). The adverse effects of long-term unemployment are well-documented, including reduced future earnings potential (Jacobson et al., 1993), skill depreciation, and increased re-entry barriers due to stigmatization (Schmieder and Heining, 2023). These impacts underscore the need for policies that facilitate job search efforts and promote skill development among the unemployed. The efficacy of active labor market policies (ALMPs) has been extensively studied. Comprehensive reviews, such as those by Card et al. (2010, 2017), highlight their effectiveness in improving employment outcomes across diverse contexts. Yet, the role of caseworkers, who act as gatekeeper agents for the unemployed by providing tailored support and directing individuals into appropriate ALMPs, remains an underexplored dimension of unemployment policy. Rosholm (2014) documents evidence in the literature that meetings with caseworkers are important for job-finding. More recently, Schiprowski (2020) shows that a (randomly) cancelled meeting with a caseworker increases unemployment duration by 5 percent and documents large heterogeneity in caseworker effectiveness. However, none of these studies delve into mechanisms or causes for why the meeting with the caseworker is important.

We contribute to filling this gap by examining potential mechanisms. Our results suggest that activation — and particularly job-oriented activation — is an important channel through which caseworker beliefs affect client outcomes. In contrast, we find no evidence that caseworker beliefs themselves are systematically shaped by prior success or activation strategies, indicating that beliefs are relatively stable traits. Understanding how to foster positive caseworker beliefs remains an important area for future research and for the design of effective employment services.

Still, a few papers study the role of caseworkers. Schiprowski et al. (2024) show that

time spent on job search increases immediately after a meeting is held. [Behncke et al. \(2010\)](#) shows that alignment between caseworker and client social groups can positively influence employment outcomes, while [Cederlöf et al. \(2024\)](#) find that caseworkers in Sweden substantially impact unemployment duration and job quality for insured job seekers, with experienced caseworkers delivering better results. Using as-if random assignment to caseworkers, they highlight that caseworker strategies and relevant experience enhance job seekers' long-term outcomes.

These studies, as well as the majority of the literature on the effectiveness of ALMPs typically investigate unemployed workers relatively close to the labor market. Not much is known about the effectiveness of ALMPs or caseworkers on the long-term unemployed or disadvantaged social assistance recipients with problems beyond unemployment. A recent study ([Baekgaard et al., 2024](#)) shows that such workers may even experience harm to their mental health by participating in ALMPs.

Building on this existing literature, our study utilizes detailed administrative data, caseworker-client survey data, and as-if random assignment of social assistance clients to caseworkers in Denmark to investigate how caseworkers' beliefs about their clients' employability influence employment and health outcomes among long-term social assistance recipients.

The belief a caseworker holds in the job potential of social assistance recipients plays a critical role in their journey towards employment. When caseworkers have confidence in their client's ability to succeed, this belief can foster motivation, boost self-confidence, and enhance recipients' sense of self-worth. Caseworkers are situated at local job centers and provide individualized counseling and job-search assistance, which have been shown to significantly impact employment outcomes, at least for those closer to the labor market ([Graversen and van Ours, 2008](#); [Crépon et al., 2013](#)). Additionally, caseworkers can refer social assistance clients to suitable job openings, leveraging their networks to facilitate entry into the workforce — an approach that aligns with findings on the significance of informal hiring channels ([Hensvik and Nordström Skans, 2016](#);

Dustmann et al., 2015). Furthermore, caseworkers often determine which active labor market program the social assistance client is assigned to, making effective targeting critical to achieving positive employment outcomes. These combined roles underscore that a deeper understanding of caseworker influence is essential for optimizing labor market services and reducing social assistance recipient’s reliance on the welfare system.

While caseworkers likely play a critical role in shaping outcomes for unemployed clients, particularly in terms of labor market results, empirical evidence on their impact is sparse, as discussed above, and virtually no research exists on health-related outcomes. This knowledge gap is especially pressing for welfare-dependent, long-term unemployed individuals, who often face additional health challenges.

A major obstacle in assessing the causal impact of caseworkers on clients’ future outcomes is that caseworkers may respond to unobserved client characteristics not captured by the available data. In these cases, estimated effects might reflect a caseworker’s ability to observe and respond to these unobserved factors rather than a direct causal effect of the caseworker’s attitude to the client’s job prospects. To determine whether a caseworker’s attitude causally affects client outcomes, we construct a measure of each caseworker’s general disposition and approach toward clients. This measure, derived from our unique caseworker survey data, reflects the caseworker’s general *job orientation*—their average belief in the job prospects of other clients in their caseload, independent of the characteristics of any particular client. The validity of this instrument relies on the assumption of random client-caseworker allocation, a condition that is typically challenging to achieve. In Danish job centers, however, social assistance clients are typically sorted into caseworker teams based on age and/or education, and caseworkers within these teams are randomly assigned to clients. A similar approach is used by Humlum et al. (2023) and Cederlöf et al. (2024) in studies of Danish and Swedish insured unemployed, where allocation to caseworker teams is determined by a date-of-birth rule. To address occasional deviations from this age/education-based allocation, we implement an instrumental variable (IV) approach, using the assigned

caseworker’s *job orientation* as an instrument, relative to the alternative caseworkers to whom the client could have been assigned under the team-based allocation rule. This IV strategy enables us to estimate the causal effect of caseworker belief on client outcomes, both in terms of employment and health.

We find that caseworkers’ beliefs in their clients’ job prospects positively influences both labor market and health outcomes for long-term unemployed social assistance recipients. Clients whose caseworkers have strong confidence in the potential of their clients to find employment experience significant improvements in earnings and employment rates over time, with particularly notable effects among clients with a qualifying educational background. For clients without a qualifying education, however, caseworker beliefs appear to drive improvements in health-related outcomes, such as reductions in painkillers and lifestyle medication use. Additionally, clients with pre-existing health conditions who are supported by caseworkers with high expectations for their job prospects show marked decreases in prescription medication use across various categories. This suggests that caseworker belief in a client’s employment potential contributes not only to economic gains but also to enhanced well-being, especially for clients with health challenges. Our findings underscore the value of caseworker support tailored to the client’s specific needs, offering key policy insights for labor market interventions aimed at vulnerable populations.

Our findings emphasize that caseworker attitudes significantly shape the labor market outcomes of long-term unemployed, vulnerable clients. A job-oriented mindset, where caseworkers hold a strong belief in their clients’ potential, not only increases employment likelihood but also yields positive spillover effects on clients’ health. This suggests that caseworker optimism — potentially through mechanisms like the Rosenthal effect — empowers clients to pursue employment with greater motivation and resilience.

We show that caseworkers with positive beliefs in their clients causally use more job-oriented activation types, hinting at a potential mechanism. An investigation into the malleability of caseworker beliefs cannot confirm that beliefs are affected by past

successes or past use of job-oriented activation types.

These insights highlight the importance of cultivating a job-focused, supportive approach within job centers. However, we do not know exactly how to affect caseworker beliefs, but prioritizing caseworker training that strengthens job-market knowledge, and refining skills for client engagement - e.g. the ability to spot potential in the client and the ability to transfer these beliefs and engagement (a pedagogical skill) - may amplify these positive effects. Job centers should ensure that caseworkers are well-equipped with local labor market insights and practical tools to guide clients effectively, thereby enhancing outcomes and reducing long-term dependency on social assistance.

The remainder of the paper is structured as follows: In Section 2, we outline the empirical framework and methodology used to examine the influence of caseworker beliefs on client outcomes. Section 3 provides the background and institutional setting of the study, establishing the context necessary for understanding the empirical approach and assumptions. Section 4 details the unique dataset employed in this study, including caseworker surveys and administrative records. Section 5 presents the main findings for both labor market and health outcomes, including robustness checks and heterogeneity analyses across client subgroups. Section 6 contains analyses of a potential mechanism and the malleability of caseworker beliefs. Finally, Section 7 offers concluding remarks and implications for policy, suggesting potential areas for future research and applications in labor market interventions for vulnerable populations.

2 Empirical Strategy

To estimate the effects of caseworker confidence on clients' employment prospects and health, we ideally require a measure of the caseworker's general attitude and approach toward clients that does not directly reflect their specific assessment of the individual client. One way to capture this would be through a survey or questionnaire administered to caseworkers, eliciting their general approach to client interactions. Unfortunately, such data are not available for our study.

Instead, we follow the empirical strategy outlined in [Doyle \(2007, 2008\)](#) and [Kling \(2006\)](#). Let Y represent an outcome such as earnings, X denote observable characteristics of the client, and B indicate the caseworker’s belief that their client will likely find a job within the next 12 months. For client (i), the model can be written as

$$Y_i = \beta B_i + X_i \gamma + \epsilon_i \quad (1)$$

The parameter of interest β will be positive if the caseworker’s belief in the client’s job prospects positively influences the client’s future life trajectory, e.g. earnings, and negative if a lack of confidence has a detrimental impact.

A positive job belief ($B = 1$) results from a caseworker’s assessment of the client, which is influenced by the client’s observable characteristics (X), unobserved factors (θ), and the caseworker’s subjective judgment during the evaluation. Let Z represent a general measure of the caseworkers’ belief in the job prospects of their clients. Let us call it the ‘job orientation’ specific to the caseworker. A model for caseworker c ’s belief in the job prospects of client i can then be expressed as

$$B_{ic} = 1[\alpha Z_c + X_i \delta + \theta_i > 0] \quad (2)$$

Consider two types of caseworkers, described as optimistic and pessimistic. Optimistic caseworkers are characterized by having a high job belief rate, Z_{op} , while pessimistic caseworkers exhibit a low job belief rate, Z_{pe} . The difference in outcomes between clients assigned to these caseworkers can be used to estimate a local average treatment effect (LATE) ([Imbens and Angrist, 1994](#)). This represents the average treatment effect for “compliers”, that is, clients whose job prospects are influenced by the caseworker’s belief. When $P(Z) = P(B = 1 | Z = z)$, this LATE parameter can be calculated using sample means as follows

$$\text{LATE}(P(z_{op}), P(z_{pe})) = \frac{E(Y | P(Z) = P(z_{op})) - E(Y | P(Z) = P(z_{pe}))}{P(z_{op}) - P(z_{pe})} \quad (3)$$

The assumptions required to interpret equation (3) as a LATE depend on the independence of Z from unobserved factors such as client-specific characteristics (θ). This independence assumption is satisfied if clients are randomly assigned to caseworkers. Additionally, we require that $\alpha \neq 0$, indicating that the caseworker's general job-orientation is significantly associated with their specific belief in the client's likelihood of job success.

A critical assumption in this context is monotonicity: any client who receives a positive job belief from a pessimistic caseworker would also receive a positive belief from an optimistic one. Conversely, a client who does not receive a positive job belief from an optimistic caseworker would also not receive one from a pessimistic caseworker. This rules out cases where an optimistic caseworker might reduce the likelihood of a positive belief.

While it is not possible to directly identify the "compliers" - clients whose job outcomes are influenced by the assignment to different caseworkers — it is feasible to describe their observable characteristics (Abadie, 2003). These characteristics provide insight into the types of clients where the results are most relevant, enhancing the understanding of how caseworker beliefs impact client outcomes.

3 Background

Danish job centers (the Danish equivalent of 'public employment services') play a crucial role in the administration and implementation of Denmark's unemployment policies, particularly concerning Unemployment Insurance (UI) and Social Assistance (SA). The job centers are tasked with administering active labor market policies (ALMP), which involve offering job-search guidance, activation, connecting unemployed individuals with job openings or educational opportunities, and overseeing the distribution of financial support for both insured and uninsured unemployed individuals (Weatherall and Markwardt, 2010).

There are two main groups within the Danish unemployment system: those eligible

for UI, who have been previously employed and are insured through an unemployment insurance fund, and those eligible for SA, which typically includes individuals who either do not qualify for UI or whose UI benefits have expired (after two years of UI benefit receipt). SA recipients are further categorized into those considered 'job-ready' and those not considered immediately ready for employment, called 'activity-ready' - signaling that they are ready to participate in active labor market programs. Most individuals receiving SA fall into the latter category due to long-term unemployment and other factors that prevent them from re-entering the labor market quickly (e.g. physical or mental health issues). Unlike UI, SA is means-tested and serves as a safety net for individuals who are no longer insured or never qualified for unemployment insurance in the first place.

Assignment of social assistance clients to caseworkers. In Denmark, public social assistance employment services are administered by local job centers in each municipality, which are responsible for assigning caseworkers to 'activity-ready' social assistance clients. The caseworkers provide personalized support to assist individuals in their job search. Our identification strategy takes advantage of the fact that job centers assign caseworkers to job seekers through a rolling system. In some job centers, particularly in larger cities, caseworkers are organized into specialized teams. These teams often focus on specific groups of job seekers based on their age or education level, reflecting the Danish social assistance policy that distinguishes between two key age groups: individuals under 30, particularly those without a vocational education, receive lower benefits known as "education help," which incentivizes them to pursue further education, while those over 30, or younger individuals who have completed a qualifying education, receive higher benefits aimed at helping them enter the workforce.

Hence, some job centers organize caseworkers into teams that primarily handle job seekers either under or over the age of 30, or those who have completed a qualifying education. However, deviations from this assignment structure can occur for exogenous reasons, such as caseworker illness or holidays, and for endogenous reasons, such

as caseworker-client matching effects. To mitigate potential bias from endogenous deviations, our identification strategy is based on the predicted team assignment of caseworkers and the rolling allocation system within the job center teams.

We exploit this rolling assignment process within job center teams by using caseworkers' subjective job orientation relative to their colleagues as an instrumental variable for assessing job seekers' employment prospects. Given that caseworkers are quasi-randomly assigned to job seekers, this instrument satisfies the exclusion restriction. We further test this assumption using observable characteristics, as detailed in section 5.

4 Data

This paper utilizes a unique caseworker questionnaire, collected after each caseworker-client meeting, from the Employment Readiness Indicator Questionnaire.¹ These survey data are linked with administrative records from Statistics Denmark using unique personal identifiers, allowing for comprehensive information on the characteristics, labor market outcomes, and health outcomes of the social assistance clients.

4.1 Data Sources

Caseworker-Client Meetings

Our dataset includes records of meetings between caseworkers and activity-ready social assistance clients across 10 Danish job centers, covering the period from December 2012 to April 2016. The dataset also includes identifiers for the social assistance client and caseworker participating in each meeting.

¹ERIQ - in Danish: Beskæftigelses Indikator Projektet/BIP aims to provide insights into Danish employment programs and support vulnerable unemployed individuals by examining the relationship between job readiness indicators and labor market outcomes across 10 Danish job centers. The individual components of the questionnaire were identified based on a literature survey of factors associated with employment and employment readiness ([Væksthuset and NewInsight, 2012](#)). ERIQ contains questions both to clients and caseworkers and predicts future employment much better than a comprehensive set of variables obtained from administrative registers. The question on the caseworkers' beliefs in the clients' future employment prospects was by far the best predictor among all questions in the questionnaire. For more details, see [Bodilsen et al. \(2025\)](#).

A novel feature of this data is that, during or immediately after each meeting, caseworkers are asked to assess the likelihood that the client will be employed within the next 12 months, using a 5-point Likert scale. Figure 1 shows in the dark gray bars that the responses tend to be rather negative - reflecting the 'activity-ready' (less employable) status of the clients - with approximately 23 percent of caseworkers answering "no" just over 25 percent were "doubtful" while around 24 percent selected "it varies" (neutral response). On the more positive side, 20 percent of responses indicated that the client had "good chances" of finding a job, while only 6 percent answered with an unconditional "yes".

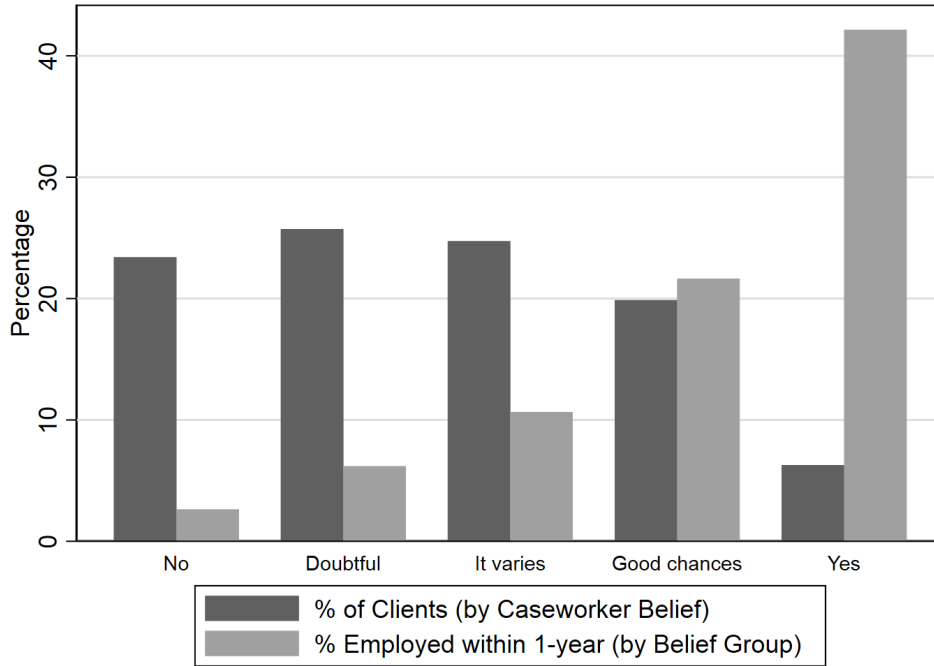
In addition, the light gray bars in Figure 1 show the actual share of clients within each caseworker belief group who obtained employment within 12 months after the meeting. Consistent with caseworker expectations, the probability of employment increases with more optimistic assessments. Clients rated "no" or "doubtful" had low employment rates, while those assessed as having "good chances" or receiving a "yes" had substantially higher employment rates, with over 40 percent of the latter group employed within a year.

First, we leverage the variation in this assessment to calculate each caseworker's job orientation relative to other caseworkers to whom the client could have been assigned, as we will discuss further in section 5.1. Second, we use this measure to create the indicator variable B , which reflects the caseworker's belief in their client's job prospects. B takes the value of one if the caseworker responds with either "Yes" or "Good chances" and zero otherwise. This variable allows us to investigate whether the caseworker's belief has a significant impact on the client's future labor market and health outcomes.

Labor Market Outcomes

Our data on employment comes from two registers. First, the *Register for Employees* (BFL) records the monthly working hours and earnings in all job spells in Denmark from 2008 and onwards. A key strength of the BFL register is its high-quality, continuous

Figure 1: Caseworker Beliefs vs. Client Employment Within 12 Months



Notes: The figure shows the distribution of clients across caseworker belief categories and the share of clients within each belief group who obtained employment within one year after the assessment. Employment status was measured using the *Register for Employees* (BFL).

data on employment hours and earnings, derived directly from third-party reports submitted to the Tax Authorities. This ensures a high level of accuracy and reliability in the measurement of these variables.

We supplement the BFL data with the *Danish Register for Evaluation of Marginalization* (DREAM), which provides weekly information on all types of public income transfer receipt. We use DREAM to investigate whether clients transition into education, which would enhance their human capital and increase their future employment prospects.

Thus, we create three labor market related outcome variables; 1) Employment (0/1), which indicates whether an individual was employed at any time during the specified period of one year following the meeting; 2) earnings, measuring a persons earnings from work in US\$ during the same period, and 3) Education (0/1), indicating whether a person commenced attending education during that period. It is important to highlight that employment and education are not mutually exclusive, as an individual can be

both employed and enrolled in education during the same period.

Health Outcomes

To investigate health outcomes, we utilize prescription medication data from *The Register of Pharmaceutical Sales* (LMDB), which provides detailed records of pharmaceutical purchases. Prescription medication use serves as an objective and quantifiable indicator of health problems, with changing use of medication reflecting changes in health status. From this register, we construct four key variables: Painkillers, Psycholeptics, Medication for addictive disorders, and Lifestyle medication. Each is measured in defined daily doses (DDD) per year after each meeting, offering a standardized way to compare medication use across individuals and over time.

Since a person can receive different types of medication, and since the DDD is an assumed average maintenance dose per day, the defined daily doses can exceed 365 per year for a given person.

Painkillers can be responsive to short-term health fluctuations, providing a near-immediate reflection of pain, whereas psycholeptics and medications for addictive disorders typically indicate more chronic or long-term conditions. Lifestyle medications encompass a variety of drug types associated with different underlying conditions, all linked to poor lifestyle choices and are often related to managing conditions like hypertension or diabetes. Use of lifestyle medications provide insight into health behaviors and preventive care. Together, these variables allow us to capture a broad spectrum of health outcomes and responses.

Social Assistance Client Characteristics

Data on the demographics of social assistance clients is sourced from the *Population Register* (BEF), which records information on gender, age, municipality of residence, and country of origin for all residents in Denmark. Educational background is drawn from the *Education Register* (UDDA), while criminal history is obtained from the

Criminal Charges Register (KRSI). To examine clients' usage of prescription medication prior to their meetings with caseworkers, we utilize LMDB. Finally, we use data from DREAM to analyze clients' labor market histories, focusing on their use of public income transfers, including social assistance benefits, as well as their past employment rates.

4.2 Analytical sample

Our analytical sample is drawn from ten municipal job centers that participated in the ERIQ Project between December 2012 and April 2016. A selection of activity-ready social assistance recipients from each job center were included in the project, and caseworkers completed a questionnaire about each client's job prospects.

We begin by removing cases where it was not possible to match the caseworker's questionnaire with a specific meeting between the caseworker and the client. Next, we restrict the sample to social assistance clients between the ages of 18 and 65, focusing exclusively on adults of working age who are not yet retired.

Each caseworker in the sample is responsible for a number of clients involved in the project. However, some caseworkers have only a few clients (or at least, a few clients for whom they answered the questionnaire). For our analysis, we concentrate on caseworkers who have completed questionnaires for five or more clients, allowing us to more reliably estimate each caseworker's overall job-orientation attitude towards their clients.

The final sample includes 10,744 meetings (and, thus, questionnaire responses) between 259 caseworkers and 3,598 clients. To better understand the characteristics of the clients, Table 1 presents summary statistics. On average, clients are around 40 years old. In the 5 years leading up to a meeting, clients spent on average 77% of their time on social assistance and 8% on sickness benefits, while their 5-year historical employment rate stands at only 7%. More than half of the clients are single, and 71% have only primary or secondary education as their highest level of

Table 1: Summary Statistics

Variables	Mean	Standard Deviation
- Age (years)	39.87	9.61
- Female (1/0)	0.57	0.50
- Single (1/0)	0.57	0.49
- Non-danish ethnicity (1/0)	0.21	0.41
- High-school or below (1/0)	0.71	0.45
- Higher education (1/0)	0.06	0.23
- 2-year employment rate history	0.02	0.08
- 3-year employment rate history	0.03	0.10
- 5-year employment rate history	0.07	0.14
- 3-year social assistance rate history	0.77	0.29
- 5-year social assistance rate history	0.65	0.31
- 3-year self-sufficient rate history	0.05	0.12
- 5-year self-sufficient rate history	0.06	0.15
- 3-year sickness benefit rate history	0.06	0.15
- 5-year sickness benefit rate history	0.08	0.13
- 3-year education benefit rate history	0.03	0.10
- 5-year education benefit rate history	0.03	0.11
- Cardiovascular diagnosis (1/0)	0.04	0.20
- Respiratory diagnosis (1/0)	0.04	0.20
- Musculoskeletal diagnosis (1/0)	0.23	0.42
- Substance-induced diagnosis (1/0)	0.06	0.23
- Affective diagnosis (1/0)	0.14	0.35
- Anxiety and stress-related diagnosis (1/0)	0.12	0.33
- Developmental disorders diagnosis (1/0)	0.01	0.08
- Lifestyle medicine (1/0)	0.24	0.43
- Pain killers (1/0)	0.33	0.47
- Antipsychotic medicine (1/0)	0.11	0.31
- Anxiety medicine (1/0)	0.07	0.25
- Anti depressive medicine (1/0)	0.28	0.45
- Abuse related medicine (1/0)	0.08	0.27
- Penal code crime (1/0)	0.13	0.34
- Traffic crime (1/0)	0.15	0.36
- Other crime (1/0)	0.09	0.28
Number of individuals	3,598	
Number of observations	10,744	

Note: The statistics pertain to social assistance clients in the 10 job centers included in this study. The characteristics are measured before the meeting with the caseworker. The baseline variable omitted for education is vocational education. The variables in this table are used as controls in the analysis in section 5.

schooling. Additionally, one-third of the clients use prescription painkillers, and 28% use antidepressant medication. These statistics underscore that the individuals in this study belong to a highly vulnerable population, grappling with substantial challenges and remaining significantly disconnected from the labor market.

5 Estimation and Results

5.1 Caseworker Assignment

To determine whether the caseworker’s positive attitude has a causal effect on outcomes, we need a measure of the caseworker’s general attitude and approach toward their clients, which can be used to instrument the belief in the client. By constructing the *Caseworker Job Orientation Differential* variable to capture caseworker’s belief relative to the average belief within their job center team, we follow a strategy similar to Humlum et al. (2023) and Cederlöf et al. (2024), who study the impact of classroom training by exploiting the quasi-random assignment of insured job seekers to caseworkers based on clients’ dates of birth under team-based allocation rules in Danish and Swedish settings. This variable shows how a caseworker’s average belief about their clients’ job prospects compares to the average belief of other caseworkers in the same team without using information on the specific client. If a client has had multiple meetings with the caseworker, all client-specific meetings are excluded when calculating the *Caseworker Job Orientation Differential* for a given client (a leave-out-mean). By subtracting the team average, this variable reflects how the individual caseworker’s job orientation deviates from their peers’ overall orientation — any of whom, due to the rotational assignment process described in section 3, could have been assigned to the client. The analysis is conducted at the client level, but the *Caseworker Job Orientation Differential* is measured at the caseworker level. It is defined for each client

i assigned to caseworker c within job center team j as

$$Z_{icj}^{cont.} = \frac{\sum_{k \neq i} n_c R_{kc}}{n_c - n_{ic}} - \frac{\sum_l n_j R_{lj} - \sum_k n_c R_{kc}}{n_j - n_c} \quad (4)$$

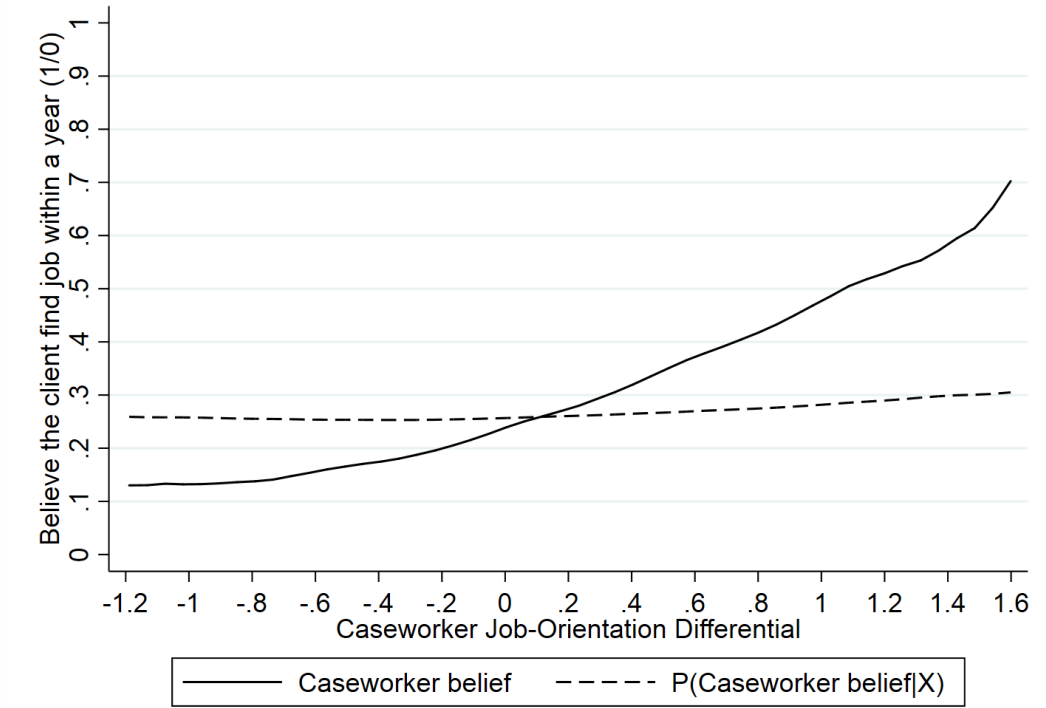
where n_c represents the total number of survey responses associated with caseworker c , while n_{ic} accounts for repeated observations of client i within caseworker c 's caseload. This ensures the denominator in the first term appropriately adjusts for the exclusion of client i when there are multiple observations for the same client. R_{kc} reflects the belief of caseworker c regarding client k . The term $\sum_l n_j R_{lj}$ captures the total belief across all observations within the job center team, and $\sum_k n_c R_{kc}$ is the aggregate belief for caseworker c 's specific caseload.

The equation consists of two main terms. The first term measures the average belief of caseworker c about their clients' job prospects, excluding client i and accounting for any repeated observations of i . This term captures the caseworker's job orientation based on their entire caseload, excluding the specific client. The second term calculates the average belief of all other caseworkers in the same job center team, j , excluding the specific caseworker, c . This term represents the team's collective orientation, providing a benchmark for comparison. By subtracting the second term from the first, we isolate the caseworker's relative job orientation within their team, allowing us to determine the relative degree of optimism the caseworker holds.

Figure 2 examines the relationship between the caseworker's job orientation and their belief in clients' likelihood of finding a job within the next 12 months. The horizontal axis represents the caseworker job orientation differential, which measures a caseworker's job orientation relative to other caseworkers on the same team. A negative value indicates a more pessimistic outlook compared to colleagues, suggesting the caseworker has lower expectations for their clients' future job prospects. Conversely, a positive value reflects a more optimistic perspective. This differential highlights variations in attitudes among caseworkers within the job center team.

The figure displays two local linear regression lines: (1) the observed belief of the

Figure 2: Caseworker Job Orientation and Belief in Client’s Job Finding within 12 Months



Note: This figure illustrates the relationship between the caseworker’s job-orientation differential and the belief in the client’s likelihood of finding a job within the next 12 months. Both the actual and predicted values of the belief are displayed. The curve represents local linear regression estimates, with a bandwidth of 0.25, highlighting the underlying trend in the data. The graph provides insights into how caseworker orientation correlates with their expectations about client employment outcomes.

caseworker regarding a client’s likelihood of securing a job within 12 months, and (2) the predicted belief indicator, constructed using all the explanatory variables listed in Table 1. These lines offer insight into how variations in caseworker job orientation influence actual and predicted beliefs about client outcomes. The predicted beliefs appear unrelated to the caseworker’s job orientation, suggesting that client characteristics do not systematically affect the caseworker’s orientation. This finding is critical, as it supports the validity of using job orientation to construct our binary instrument without violating the exclusion restriction. We explore this further in Table 2. In contrast, job orientation is positively correlated with the observed belief, demonstrating that more optimistic caseworkers are increasingly likely to believe that their clients will secure a job. These relationships indicate that the job orientation variable is associated with beliefs about clients’ job prospects while remaining unaffected by subjective knowledge about specific clients.

Table 2: Client Characteristics and Caseworker Assignment

	(1) Coefficient	(2) p-Value
Age (years)	-0.001	0.482
Female (1/0)	-0.015	0.479
Single (1/0)	-0.012	0.512
Non-danish ethnicity (1/0)	0.008	0.853
High-school or below (1/0)	-0.015	0.470
Higher education (1/0)	0.072**	0.041
2-year employment rate history	-0.056	0.654
3-year employment rate history	0.114	0.521
5-year employment rate history	0.085	0.563
3-year social assistance rate history	-0.120	0.350
5-year social assistance rate history	0.110	0.396
3-year self-sufficient rate history	0.123	0.515
5-year self-sufficient rate history	0.058	0.772
3-year sickness benefit rate history	-0.000	0.998
5-year sickness benefit rate history	0.156	0.336
3-year education benefit rate history	0.117	0.544
5-year education benefit rate history	0.114	0.543
Cardiovascular diagnosis (1/0)	0.005	0.890
Respiratory diagnosis (1/0)	0.044	0.247
Musculoskeletal diagnosis (1/0)	0.022	0.233
Substance-induced diagnosis (1/0)	0.025	0.515
Affective diagnosis (1/0)	-0.015	0.565
Anxiety and stress-related diagnosis (1/0)	-0.024	0.347
Developmental disorders diagnosis (1/0)	0.057	0.440
Life style medicine (1/0)	0.008	0.661
Pain killers (1/0)	0.008	0.603
Anti psychotic medicine (1/0)	-0.004	0.865
Anxiety medicine (1/0)	-0.020	0.463
Anti depressive medicine (1/0)	-0.007	0.685
Abuse related medicine (1/0)	-0.003	0.895
Penal code crime (1/0)	-0.006	0.798
Traffic crime (1/0)	0.046**	0.024
Other crime (1/0)	-0.021	0.487
Observations	10,744	
Number of Caseworkers	259	
Mean of dependent variable	0.469	
Standard derivation of dependent variable	0.499	
Job center team FE	Yes	

Note: Information used as covariates is measured prior to the meeting. P-values are calculated in column (2) using standard errors clustered at the caseworker level. The regression includes job center team's fixed effect. ** significance at the 5% level and * at the 10% level.

To estimate the local average treatment effects (LATE), we classify caseworkers into two groups based on their job orientation differential. This classification is then used to construct an optimistic caseworker job orientation instrument, Z_{icj} . Specifically, the instrument Z_{icj} takes the value of one if the caseworker's job orientation is classified

as optimistic — defined as having a positive job orientation differential — and zero otherwise. In other words, caseworkers with a positive differential are more optimistic than the average caseworker in their job center team.

Using this instrument, we estimate the LATE by identifying the complier clients whose caseworker assessment shifts from negative ($B = 0$) to positive ($B = 1$) due to being assigned to an optimistic caseworker rather than a pessimistic one. This approach leverages variation in caseworker optimism within teams to isolate the causal effect of belief in the client on client outcomes.

If the rotational assignment process effectively randomizes clients to caseworkers, observable client characteristics should not be related to the instrument. Table 2 presents the results of a regression with an optimistic caseworker job orientation, Z_{icj} , as the dependent variable, with standard errors clustered at the caseworker level to account for dependencies among clients assigned to the same caseworker. On average 47% of the clients is assigned to an optimistic caseworker. The results indicates no significant relationship between the instrument and observable client characteristics, with only two out of 33 variables reaching significance at the 5% level. This suggests that “difficult cases” - or “easy cases” - are not systematically assigned to specific caseworkers.

5.2 Belief in Clients Job Prospects

The first-stage relationship between the belief in the client’s job prospects and being assigned an optimistic caseworker is estimated with and without covariates for client i assigned to caseworker c in job center team j using the following model:

$$B_{icj} = \alpha_0 + \alpha_1 Z_{icj} + \alpha_2 X_i + \epsilon_{icj} \quad (5)$$

Table 5.2 presents the first-stage results, both with and without the inclusion of covariates. Being assigned to an optimistic caseworker significantly increases the likelihood of being predicted as likely to find a job within the next year, with a

Table 3: Caseworker Assignment And Belief in Client

	(1) Coef.	(2) Std. Error	(3) Coef.	(4) Std. Error
Optimistic Caseworker Job Orientation (Z_{icj})	0.201**	(0.020)	0.190**	(0.019)
Age (years)			-0.003**	(0.001)
Female (1/0)			-0.032**	(0.011)
Single (1/0)			0.005	(0.012)
Non-danish ethnicity (1/0)			-0.048**	(0.016)
High-school or below (1/0)			-0.040**	(0.014)
Higher education (1/0)			0.044*	(0.024)
2-year employment rate history			0.384**	(0.117)
3-year employment rate history			-0.075	(0.117)
5-year employment rate history			0.205**	(0.076)
3-year social assistance rate history			0.045	(0.066)
5-year social assistance rate history			-0.116**	(0.056)
3-year self-sufficient rate history			0.322**	(0.096)
5-year self-sufficient rate history			-0.258**	(0.085)
3-year sickness benefit rate history			-0.069	(0.092)
5-year sickness benefit rate history			-0.033	(0.091)
3-year education benefit rate history			0.136	(0.149)
5-year education benefit rate history			0.035	(0.143)
Cardiovascular diagnosis (1/0)			-0.020	(0.025)
Respiratory diagnosis (1/0)			-0.044*	(0.027)
Musculoskeletal diagnosis (1/0)			-0.019*	(0.011)
Substance-induced diagnosis (1/0)			0.002	(0.022)
Affective diagnosis (1/0)			-0.025*	(0.014)
Anxiety and stress-related diagnosis (1/0)			-0.049**	(0.016)
Developmental disorders diagnosis (1/0)			0.003	(0.060)
Lifestyle medicine (1/0)			-0.031**	(0.013)
Pain killers (1/0)			-0.034**	(0.009)
Antipsychotic medicine (1/0)			-0.049**	(0.017)
Anxiety medicine (1/0)			-0.019	(0.019)
Anti depressive medicine (1/0)			-0.066**	(0.013)
Abuse related medicine (1/0)			0.010	(0.018)
Penal code crime (1/0)			-0.022	(0.018)
Traffic crime (1/0)			0.011	(0.016)
Other crime (1/0)			-0.026	(0.020)
Observations	10,744			
Mean of dependent variable	0.261			
Job center FE	Yes			

Note: The regression models are estimated by OLS and include job center teams fixed effect. Standard errors are clustered at the caseworker level. Missing values are replaced with zero and missing value indicators. ** significance at the 5% level and * at the 10% level.

coefficient of 0.201. While the coefficient decreases slightly when covariates are included, it remains relatively stable, suggesting a robust positive correlation.

Several observable client characteristics are also associated with the caseworker's belief in the client's job prospects. For instance, age, being female, non-Danish

ethnicity, and having a lower level of education are negatively related to the caseworker’s expectations. Not surprisingly, a higher employment rate in the years prior to the meeting positively influences the caseworker’s expectations of the client finding a job. Finally, as expected, the use of prescription medication generally decreases the caseworker’s prediction that the client will obtain employment. These findings reflect the weight caseworkers place on both observable health and employment history when forming their assessments. Importantly, these are unrelated to our optimistic caseworker job orientation instrument (as was shown in Table 2).

5.3 Impact of Caseworker Beliefs on Client Outcomes

We examine the impact of caseworker’s beliefs about their clients’ job prospects on labor market outcomes, which is the primary objective of the job centers (for clients below 30, enrolling in education is an additional goal). Additionally, we explore whether these beliefs have any influence on the client’s health, as measured by their use of prescription medication. We exploit the following empirical model for client i meeting with case worker c in job center team j ,

$$Y_{icj} = \beta_0 + \beta_1 B_{icj} + \beta_2 X_i + \omega_{icj} \quad (6)$$

where Y is the outcome and β_1 is the parameter of interest. This model is estimated separately for each outcome by OLS and two-stage least squares (2SLS), with the optimistic caseworker indicator, Z_{icj} , used as an instrument for the indicator for caseworker belief in the client, B_{icj} .

Table 4 reports the results for labor market outcomes across three time periods after a given meeting with a caseworker, examining clients’ employment, earnings, and educational enrollment. Panel A investigates the likelihood of entering employment, Panel B focuses on earnings (in USD), and Panel C explores the probability of enrolling in education. These outcomes are tracked for up to three years after the client-caseworker meeting.

Table 4: Belief in Client and Labor Market Outcomes

	OLS	t+1 to t+12			OLS	t+13 to t+24			OLS	t+25 to t+36		
		OLS	2SLS	2SLS	OLS	OLS	2SLS	2SLS	OLS	OLS	2SLS	2SLS
A. Dependent variable: Employment (1/0)												
Believe in client (1/0)	0.22** (0.01)	0.20** (0.01)	0.16** (0.06)	0.15** (0.06)	0.24** (0.01)	0.21** (0.01)	0.19** (0.06)	0.16** (0.06)	0.24** (0.01)	0.21** (0.01)	0.16** (0.07)	0.14** (0.07)
Mean of dependent variable	0.15				0.22				0.29			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
B. Dependent variable: Earnings (USD)												
Believe in client (1/0)	3653.90** (286.06)	3363.05** (281.95)	3245.81** (885.55)	2945.29** (920.88)	5620.57** (389.98)	5060.52** (387.01)	4389.08** (1486.48)	3815.53** (1510.45)	6779.69** (477.96)	5898.17** (459.07)	4275.43** (2035.99)	3484.12* (1918.85)
Mean of dependent variable	1640.75				3296.76				4784.40			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
C. Dependent variable: Education (1/0)												
Believe in client (1/0)	0.06** (0.01)	0.05** (0.01)	0.09** (0.03)	0.07** (0.03)	0.06** (0.01)	0.05** (0.01)	0.09** (0.04)	0.08** (0.03)	0.05** (0.01)	0.04** (0.01)	0.08* (0.04)	0.08** (0.04)
Mean of dependent variable	0.04				0.06				0.06			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Note: The table reports the results of OLS and 2SLS estimates of the relationship between caseworker belief in clients and labor market outcomes across three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects, with specifications both with and without full controls. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Looking at the probability of finding employment, the average employment rate is 15% in the first year, 22% in the second year, and 29% in the third year. According to the OLS estimates, clients whom caseworkers believe will likely find a job are 20 to 22 percentage points more likely to be employed in the first year, with similar increases in the second and third years. The 2SLS estimates show a slightly lower impact, with employment likelihood increasing by 15 to 16 percentage points in the first year and similar increases in subsequent years. These findings confirm that caseworker optimism plays a significant role in improving clients' employment prospects.

In panel B, the mean earnings in the sample are \$1,641 in the first year after the meeting, rising to \$3,300 in the second year and \$4,780 in the third year, indicating a general increase in annual earnings across the entire sample. In terms of the OLS estimates, clients whom caseworkers assessed as likely to find a job within the first year show significantly higher earnings, with earnings \$3,363 to \$3,653 higher in the first year, \$5,060 to \$5,620 higher in the second year, and \$5,898 to \$6,779 higher in the third year. The 2SLS estimates are somewhat lower than the OLS estimates but remain positive and statistically significant. Interestingly, the magnitude of the earnings effect diminishes over time when compared to the overall sample mean.

Finally, Panel C examines educational enrollment. The mean likelihood of enrolling in education is 4% in the first year, rising to 6% in the second and third years. The OLS estimates show that clients assessed as likely to find a job are 5 to 6 percentage points more likely to enroll in education in the first year, with a slightly smaller impact in the second and third years. The 2SLS results suggest a stronger effect, with education enrollment increasing by 7 to 9 percentage points in the first year and remaining similarly high in the following periods.

Overall, both the OLS and 2SLS estimates consistently show that clients whom caseworkers believe are likely to find a job experience significantly better labor market outcomes in terms of earnings, employment, and education. The 2SLS estimates, which account for potential endogeneity in the OLS estimates, corroborate these effects,

though they are generally slightly smaller than the OLS results. A key distinction between the two methods is that the instrumental variable approach focuses on the marginal cases — those clients whose positive caseworker assessment was influenced by the quasi-random assignment to an optimistic caseworker. Despite this difference, the findings consistently indicate that caseworker optimism has a large and lasting impact on clients’ economic and educational outcomes over the three-year period following their meeting.

Table 5 reports the impact of caseworker beliefs on clients’ health outcomes, measured through prescription medicine usage. Panel A focuses on painkiller use, which we expect to be highly sensitive to changes in health, as improvements are often quickly reflected in decreased painkiller consumption. Clients whose caseworkers believed they would find a job show a significant reduction in painkiller use during the first year, with 2SLS estimates indicating reductions of 51 to 102 DDDs over the three years. This pattern aligns with expectations, as painkiller usage is typically one of the first indicators to decline when a client’s overall well-being improves.

Panel B examines the use of psycholeptics, where we observe inconsistent results between the OLS and 2SLS estimates, with signs differing and large uncertainty in the estimates. Due to this variability and lack of precision, it does not appear that the caseworker’s belief in their client’s job prospects has a clear impact on the client’s use of psycholeptic medication.

Panel C looks at medicine for addictive disorders, where reductions are smaller but become borderline significant in the 2nd and 3rd year, particularly with the 2SLS estimate showing a reduction of 28 DDDs, suggesting some long-term improvements in substance use.

Finally, Panel D focuses on lifestyle medicines (e.g., for diabetes and cardiovascular conditions). Interestingly, significant reductions in lifestyle medicine are seen in the third year, with decreases of up to 126 DDDs, suggesting that greater belief in a client leads to improved employment that may lead to better management of long-term health

conditions over time.

Table 5: Belief in Client and Health Outcomes

	OLS	t+1 to t+12			OLS	t+13 to t+24			OLS	t+25 to t+36		
		OLS	2SLS	2SLS	OLS	OLS	2SLS	2SLS	OLS	OLS	2SLS	2SLS
A. Dependent variable: Painkiller (DDD)												
Believe in client (1/0)	-26.32** (5.13)	-12.19** (3.86)	-50.57* (26.25)	-63.79** (19.66)	-22.89** (4.75)	-11.45** (3.80)	-79.12** (26.67)	-96.26** (23.69)	-19.67** (4.21)	-14.13** (3.85)	-84.40** (27.13)	-102.44** (27.08)
Mean of dependent variable	69.88				64.44				45.43			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
B. Dependent variable: Psycholeptics (DDD)												
Believe in client (1/0)	-18.15** (3.12)	-7.88** (2.68)	0.10 (19.70)	6.74 (15.38)	-14.11** (3.24)	-6.58** (3.06)	11.91 (20.02)	16.30 (18.36)	-11.39** (3.13)	-7.82** (3.09)	10.29 (19.13)	9.75 (18.55)
Mean of dependent variable	32.14				29.17				20.97			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
C. Dependent variable: Medicine used for addictive disorders (DDD)												
Believe in client (1/0)	-2.43 (2.86)	-1.54 (2.70)	-15.75 (15.09)	-21.91 (13.82)	-2.92 (2.67)	-1.38 (2.52)	-25.04* (13.77)	-30.64** (13.17)	-3.32 (2.31)	-2.04 (2.26)	-25.32* (13.45)	-28.93** (13.47)
Mean of dependent variable	22.41				18.87				14.19			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
C. Dependent variable: Lifestyle medicine (DDD)												
Believe in client (1/0)	-38.13** (13.79)	4.33 (9.72)	-6.74 (80.89)	-25.79 (68.86)	-29.37** (13.33)	3.01 (10.60)	-11.52 (73.81)	-42.76 (61.46)	-27.19** (11.64)	-11.52 (10.04)	-84.55 (68.68)	-126.84** (62.95)
Mean of dependent variable	158.64				147.60				104.97			
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Note: The table reports the results of OLS and 2SLS estimates of the relationship between caseworker belief in clients and health outcomes across three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects, with specifications both with and without full controls. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

5.4 Robustness

In the main analysis, we estimate the effect of a caseworker’s belief in the specific client’s job prospects using a binary instrument that categorizes caseworkers as either optimistic or not. To ensure the robustness of our findings, we conduct additional analyses using both continuous and categorical versions of the caseworker job orientation instrument and explore alternative clustering methods.

Tables A.1 and A.2 presents the 2SLS estimation results for the full model using different specifications of the instrument. First, we replace the binary instrument with the continuous version of the caseworker job orientation variable. This shift changes the interpretation of the estimated effect from a Local Average Treatment Effect (LATE) to a Marginal Treatment Effect (MTE) — capturing the average treatment effect for clients who are on the margin of receiving a positive assessment from their caseworker. The margin of a positive assessment varies with the instrument, allowing us to interpret the MTE as the limit of the LATE as the difference in the propensity for a positive assessment approaches zero. Formally, this is expressed as the derivative of equation (3):

$$MTE(P(z)) = \frac{\partial E(Y|P(z))}{\partial P(z)} \quad (7)$$

Here, the MTE estimates describe whether outcomes for clients on the margin of receiving a positive assessment from the caseworker improve or decline as we move from a more pessimistic to a more optimistic caseworker. This approach provides a nuanced view of how client outcomes respond to incremental changes in caseworker job optimism. Columns 1, 5, and 9 in both tables show that the estimates are similar for labor market outcomes and clients’ use of painkillers when exploiting caseworker job orientation as a continuous instrument.

Additionally, we categorize the continuous instrument into 3, 5, and 10 levels of caseworker job orientation to explore different levels of detail in caseworker beliefs.

These categories range from broad divisions (e.g., pessimistic, neutral, and optimistic with 3 categories) to finer distinctions (10 categories). Testing these alternative specifications helps verify whether our findings are robust to different ways of splitting caseworker job orientation and whether they hold consistently across varying levels of granularity. Tables A.1 and A.2 demonstrate that the main findings remain robust across these alternative categorizations of our instrument.

In the main analysis, we cluster standard errors at the caseworker level to account for the potential dependence of outcomes on specific caseworkers, who may influence multiple clients. To further test robustness, we also conduct alternative clustering by job center and by client in tables A.3 and A.4. Clustering at the job center level accounts for potential unobserved factors specific to each job center, such as local labor market conditions or managerial practices, which may influence both caseworkers and clients within the center. In contrast, clustering by client addresses within-individual correlations, adjusting for dependencies in outcomes that arise when clients have repeated measures over time. By testing these different clustering methods, we ensure that our estimates are not unduly influenced by potential correlations at the caseworker, job center, or client level. The tables show consistent results across different clustering specifications, indicating that the conclusions remain stable regardless of the clustering method applied. This consistency reinforces confidence in the effect of caseworker belief on client outcomes.

5.5 Effects Across Client Characteristics

Given the overall positive effects observed on both labor market outcomes and health, it is relevant to explore whether these effects vary by client characteristics. Certain clients may respond more strongly to positive stimuli from their caseworker than others. To investigate this, we examine heterogeneity across three classic groups: age, education, and health status, assessing whether the effects across different categories.

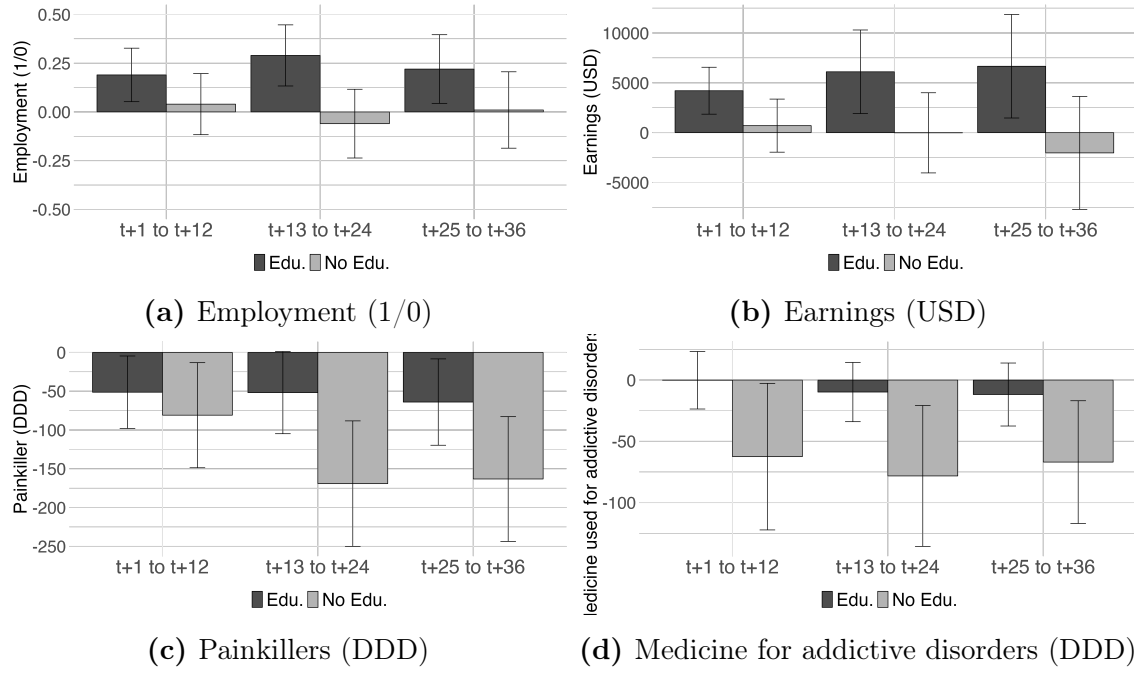
We begin by examining heterogeneity by age, dividing clients into three groups:

those below 30, between 30 and 50, and above 50. Age is a critical factor in determining labor market engagement and health outcomes, as individuals in different age groups often face distinct challenges and opportunities. Younger clients may benefit more from positive job assessments as they are at the beginning of their careers and can more readily build human capital. In contrast, clients between 30 and 50 might experience different pressures, such as family and financial obligations, which may influence how they respond to caseworker assessments. For clients over 50, barriers to re-entering or remaining in the workforce — such as age-related health issues or employer biases — may make the impact of a positive assessment distinct from that on younger clients. Tables A.5 and A.6 present the results by age group. We find no significant age-based differences in employment and earnings outcomes. However, younger clients who comply are more likely to enroll in education, aiming to build human capital and improve long-term employment prospects. In contrast, health outcomes show a notable response among clients over age 30, with these compliers reducing their general medicine usage. This suggests that older clients receiving a positive assessment due to being assigned an optimistic caseworker experience tangible health improvements, while younger clients are more likely to pursue educational pathways that may benefit their future in the workforce.

Splitting social assistance clients based on educational attainment allows us to explore whether caseworker beliefs influence clients differently depending on their educational background. Given that individuals with more education may have different labor market and health trajectories compared to those with less, examining the effects within these groups provides insights into whether positive caseworker beliefs have varying impacts on economic and health-related outcomes. Figure 3 shows selected LATEs by qualifying education vs. no qualifying education.

In the employment subplot (a), we see that clients with a qualifying education experience a noticeable positive employment effect persistent over time. For clients with no qualifying education, we find no effect. Similar results are present in the earnings

Figure 3: Selected LATEs by Education

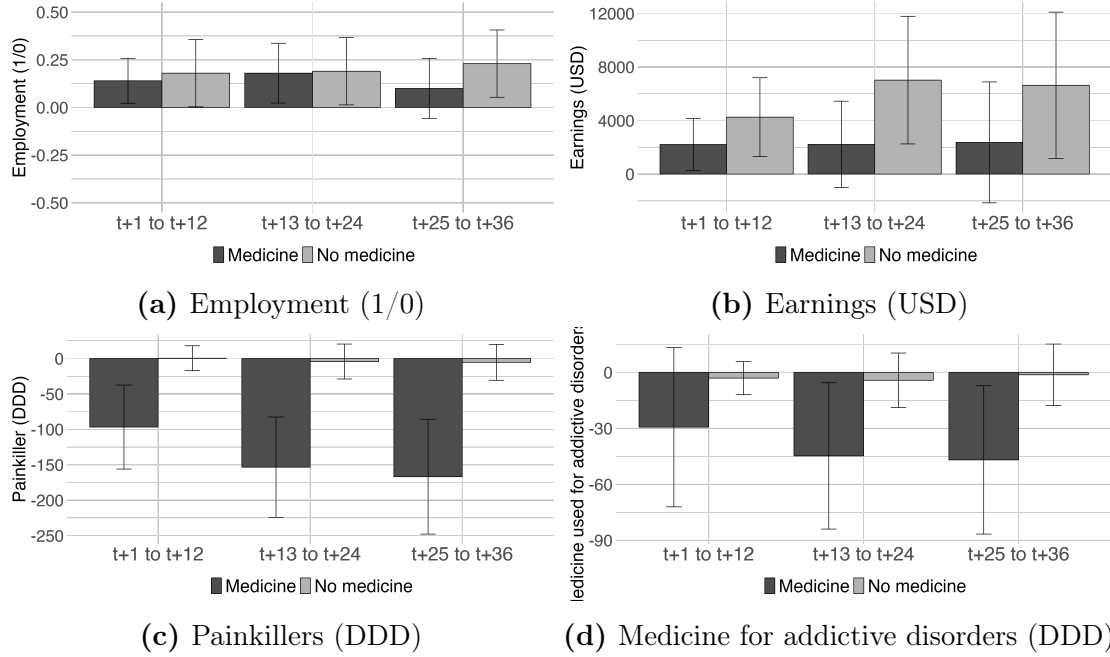


Note: Each subplot represents the estimated Local Average Treatment Effect (LATE) from our 2SLS main specification for clients who have completed a qualifying education (i.e. vocational training, college, or University) vs. those who have not over time. The outcomes shown include effects on employment, earnings, painkiller usage, and medication for addictive disorders. See table A.7 and A.8 for more information and all outcomes.

subplot (b). In the Painkillers subplot (c), clients without a qualifying education show a large and significant reduction in painkiller usage over time, particularly in the second and third years. For clients with a qualifying educational degree, we find borderline significant effects. Finally, the Medicine for Addictive Disorders subplot (d) shows a reduction in medication use among clients without a qualifying education, which is in line with what we observed before and may reflect a needed health improvement fostered by supportive caseworker interactions.

Figure 4 illustrates how caseworker optimism influences clients differently based on their prior prescription medicine usage. Across labor market outcomes, both groups — those with and without prior medication use — show positive tendencies in both finding employment and obtaining earnings gains, with clients without pre-existing health issues seeing slightly higher gains, particularly in the second and third years. However, in terms of health outcomes, a more distinct effect emerges: clients with prior medication usage show notable reductions in painkiller use and medication for addictive disorders, especially in the later periods, while no such effects are found for

Figure 4: Selected LATEs by Medicine Usages



Note: Each subplot represents the estimated Local Average Treatment Effect (LATE) from our 2SLS main specification for clients who prior to the meeting uses prescription medicine vs those who do not over time. The outcomes shown include effects on employment, earnings, painkiller usage, and medication for addictive disorders. See table A.9 and A.10 for more information and all outcomes.

those without prior usage. This suggests that clients with underlying health conditions benefit not only economically but also in health terms, likely experiencing improved well-being and reduced dependency on medications. These results underscore that caseworker optimism has broad economic benefits, while health improvements are more pronounced for those with pre-existing conditions, suggesting a tailored positive impact where clients need it most.

6 Mechanisms and Malleability

An important question is through which channels the documented effects of caseworker beliefs on client labor market and health outcomes arise, and to what extent caseworkers' beliefs are malleable. In this section, we investigate whether caseworkers with higher beliefs in their clients' job prospects deploy different types of activation strategies or use activation more intensively. Second, we examine whether caseworker beliefs themselves are shaped by prior success or by prior use of job-oriented activation.

6.1 Activation Type as a Mechanism

One likely pathway through which caseworker optimism may translate into improved outcomes is through use of different types of activation programs. If caseworkers who believe in their clients are more inclined to initiate activation, and particularly job-oriented activation interventions, this could help explain why their clients achieve better employment and health outcomes - since job-oriented activation programs typically show better effects.

Table 6 presents results, using the 2SLS estimator, on the causal association between caseworker's beliefs in their clients and subsequent activation outcomes within 3, 6, and 12 months after a caseworker-client meeting. We distinguish between job-oriented and classroom training activation types. Job-oriented activation consists of employment subsidies and internships at private or public sector firms, while classroom training consists of anything from job search courses to skills upgrading (e.g. short courses on IT, brick-laying etc.).

The results show a clear pattern: caseworkers who believe in their client are significantly more likely to initiate activation, particularly job-oriented activation. For example, clients whose caseworker believes in them are 19 to 35 percentage points more likely to receive job-oriented activation. This suggests that caseworker optimism is not a passive attitude but translates into more active engagement with clients through the use of activation measures aimed directly at labor market integration.

These findings are consistent with the interpretation that activation, and especially job-oriented activation, is an important channel through which caseworker beliefs affect client outcomes.

6.2 What Shapes Caseworker Beliefs?

Next, we explore whether caseworker beliefs themselves are shaped by caseworkers' prior success with clients or by their prior use of job-oriented activation. If this were the case, it would suggest a feedback loop, where positive experiences reinforce optimistic

Table 6: Effect of Caseworkers' Beliefs on Clients' Activation: Probability and Duration of Activation Over Time

	First 3 months			First 6 months			First 12 months		
	Any	Job-oriented	Upskilling	Any	Job-oriented	Upskilling	Any	Job-oriented	Upskilling
Believe in client (1/0)	0.22** (0.11)	0.19** (0.08)	0.11 (0.08)	Panel A: Indicator for activation (1/0)					
				0.28** (0.11)	0.28** (0.09)	0.15 (0.09)	0.25** (0.09)	0.35** (0.10)	0.12 (0.09)
Mean of dependent variable	0.55	0.23	0.37	0.63	0.29	0.44	0.72	0.39	0.54
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Jobcenter, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: All regressions include jobcenter fixed effects. The estimates represent the local average treatment effect (LATE) of caseworkers' beliefs on their use of activation within 3, 6, and 12 months following the meeting. Robust standard errors are reported in parentheses. ** $p < 0.05$, * $p < 0.1$.

beliefs.

Table 7 investigates whether a higher success rate in placing clients in employment in 2013–2014 predicts caseworkers’ average beliefs in 2015–2016. Similarly, Table A.11 in Supplementary Material examines whether higher rates of job-oriented activation in prior years predict future beliefs.

We find no evidence that prior success rates or prior use of job-oriented activation shape future beliefs. Once controlling for baseline beliefs, neither prior success nor activation use significantly predicts later beliefs. This suggests that caseworker beliefs are relatively stable traits and not strongly shaped by past experiences or behavioral feedback loops.

Overall, the evidence thus points to activation — and in particular job-oriented activation — as one likely mechanism through which caseworker beliefs influence client outcomes. However, we find no indication that caseworker beliefs themselves are systematically shaped by earlier success or by prior activation strategies. Understanding what drives differences in caseworker beliefs thus remains an important topic for future research. In particular, identifying ways to positively influence caseworker beliefs — for example, through training, management practices, or peer effects — could provide a promising lever to improve client outcomes. Future work should explore whether such interventions can help foster more optimistic caseworker attitudes in a sustainable way.

Table 7: Does Early Success Shape Future Beliefs? The Association between Caseworkers' Success Rates and Their Future Beliefs

	Caseworkers avg. belief in clients, 2015 & 2016		
	(1)	(2)	(3)
Success rate, 2013 & 2014	0.180 (0.172)	0.008 (0.155)	-0.001 (0.231)
Caseworkers avg. belief in clients, 2013 & 2014		0.489** (0.125)	0.429* (0.245)
Observations	125	125	125
Mean of dependent variable	0.283	0.283	0.283
Jobcenter FE	Yes	Yes	Yes
Covariates	No	No	Yes

Notes: All Regressions contains jobcenter fixed effects. It measures if caseworker success in 2013-2014 (proportion of clients obtaining employment) affect the future belief in clients (in years 2015 and 2016). Robust standard errors in parentheses.

*** $p < 0.05$, * $p < 0.1$*

7 Conclusion

The findings of this study document the profound role that caseworker attitudes play in influencing the outcomes of long-term unemployed and disadvantaged social assistance recipients. When caseworkers adopt a job-oriented mindset, characterized by a belief in their clients' potential to succeed in the workforce, they not only increase the likelihood of clients securing employment but also contribute to significant spillover effects on clients' health and overall well-being. This positive outlook, also known as the Rosenthal or Pygmalion effect, indicates that client outcomes can improve as a result of the empowerment and motivation fostered by caseworker confidence.

Our results suggest that activation, and in particular job-oriented activation, is an important mechanism through which caseworker beliefs translate into better client outcomes. In contrast, we find that caseworker beliefs themselves appear stable over time and are not systematically shaped by prior success or activation behavior. Understanding how to foster positive caseworker beliefs thus remains an important area for future research and may provide a promising lever for improving employment services.

The implication is clear: by fostering a mindset that optimistically views clients'

job potential, caseworkers can significantly influence their clients' trajectory toward success. A job-oriented approach encourages caseworkers to focus on clients' employment prospects, engaging with them as individuals rather than merely fulfilling procedural requirements for active measures. By listening to client aspirations, considering viable employment options, applying professionally grounded discretion to identify client resources and potentials, and by tailoring guidance to real-world job opportunities, caseworkers with a positive approach promote a self-reinforcing pathway toward employment.

These findings point to practical policy recommendations for job centers: cultivating a supportive, job-focused environment among caseworkers should be a priority, as it is crucial to helping clients reenter the labor market. To support this, job centers could benefit from exploring factors and training that foster a job-oriented approach to client interactions. Additionally, providing caseworkers with skills and tools to set realistic job goals, along with a solid knowledge of local labor market opportunities, could amplify this effect, as well as refining caseworkers' skills for client engagement — e.g. the ability to spot potential in the client and the ability to transfer these beliefs and engagement (a pedagogical skill). Through these approaches, job centers can maximize the effectiveness of their employment support programs, better positioning long-term unemployed clients for sustainable employment and improved health.

A limitation of the main result is that we have no strong evidence on whether and how caseworker beliefs can be affected. While one might be concerned that prior client success could influence future caseworker beliefs, our analysis finds no evidence that this is the case. Caseworker beliefs appear to be relatively stable over time and are not systematically shaped by prior success or prior activation use. Understanding what drives initial differences in caseworker beliefs thus remains an important topic for future research.

Our findings suggest that caseworker optimism causally improves client outcomes, rather than reflecting reverse causality where past successful clients boost caseworker

confidence. Three key elements of our design support this interpretation. First, the quasi-random assignment of clients to caseworkers ensures that unobserved client characteristics do not systematically influence caseworker beliefs. Second, our instrumental variable — caseworkers’ general job orientation, derived from their interactions with other clients — isolates the effect of caseworker disposition from client-specific factors. This design choice explicitly disentangles caseworker optimism from prior client success. Third, the temporal sequence — caseworker beliefs are measured during or immediately after initial meetings, preceding observed outcomes — establishes a clear directionality consistent with the Pygmalion effect, where elevated expectations drive improved performance.

The health improvements observed among clients with pre-existing conditions further reinforce the direction of causality. Reductions in painkiller and lifestyle medication use are unlikely to retroactively shape caseworker beliefs, as these outcomes manifest months after the initial assessment and are not directly observable by the caseworker. Robustness checks confirming balance in client characteristics across caseworkers (Table 2) and consistent effects across alternative instrument specifications (Tables A.1–A.4) further mitigate concerns of confounding. While feedback loops (e.g., caseworkers updating beliefs based on client progress) may exist, our identification strategy focuses on the initial belief’s impact, which is exogenous to subsequent outcomes.

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Supplementary Material for

**Knockin' on Employment's Door: The Power
of Caseworker Beliefs on Job and Health
Outcomes for the Long-term Unemployed**

(not intended for publication)

Table A.1: Alternative Instrument - Labor Market Outcomes

	<u>t+1 to t+12</u>				<u>t+13 to t+24</u>				<u>t+25 to t+36</u>			
	Z-cont.	3-cat Z	5-cat Z	10-cat Z	Z-cont.	3-cat Z	5-cat Z	10-cat Z	Z-cont.	3-cat Z	5-cat Z	10-cat Z
A. Dependent variable: Employment (1/0)												
Believe in client (1/0)	0.17** (0.05)	0.19** (0.05)	0.19** (0.05)	0.18** (0.05)	0.20** (0.06)	0.20** (0.06)	0.19** (0.05)	0.21** (0.05)	0.15** (0.05)	0.18** (0.06)	0.12** (0.05)	0.14** (0.05)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Earnings (USD)												
Believe in client (1/0)	3134.31** (746.83)	2861.27** (851.41)	3101.10** (770.35)	2887.02** (701.16)	3966.20** (1231.15)	4096.00** (1432.47)	3906.29** (1302.82)	4044.24** (1178.71)	3425.67** (1344.87)	3721.47** (1625.93)	3044.53** (1451.43)	3498.74** (1351.51)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Education (1/0)												
Believe in client (1/0)	0.09** (0.02)	0.07** (0.02)	0.07** (0.02)	0.08** (0.02)	0.09** (0.03)	0.09** (0.03)	0.09** (0.03)	0.09** (0.03)	0.09** (0.03)	0.09** (0.04)	0.09** (0.03)	0.10** (0.03)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using different instruments for the relationship between caseworker belief in clients and labor market outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.2: Alternative Instrument - Health Outcomes

	t+1 to t+12				t+13 to t+24				t+25 to t+36			
	Z-cont.	3-cat Z	5-cat Z	10-cat Z	Z-cont.	3-cat Z	5-cat Z	10-cat Z	Z-cont.	3-cat Z	5-cat Z	10-cat Z
A. Dependent variable: Painkiller (DDD)												
Believe in client (1/0)	-57.28** (16.66)	-56.25** (17.43)	-64.73** (16.70)	-59.26** (15.90)	-70.44** (22.74)	-73.11** (21.28)	-78.99** (21.08)	-71.90** (20.68)	-67.91** (26.60)	-74.03** (24.65)	-77.65** (23.39)	-73.74** (23.57)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Psycholeptics (DDD)												
Believe in client (1/0)	-8.39 (14.28)	2.80 (14.13)	0.15 (13.26)	-2.82 (13.19)	0.91 (16.79)	3.61 (16.89)	9.74 (15.94)	8.02 (15.48)	4.52 (16.76)	7.96 (18.48)	9.68 (16.93)	6.56 (16.30)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Medicine used for addictive disorders (DDD)												
Believe in client (1/0)	-9.86 (10.55)	-19.45 (14.60)	-14.84 (10.75)	-15.41 (12.13)	-15.90 (10.67)	-29.19** (13.36)	-17.71 (11.01)	-21.92* (11.83)	-13.20 (9.47)	-24.34* (12.85)	-15.47 (10.50)	-22.07** (11.01)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Lifestyle Medicine (DDD)												
Believe in client (1/0)	-26.57 (49.05)	17.68 (64.01)	-28.36 (52.73)	-12.60 (47.83)	-30.83 (45.77)	-14.15 (56.30)	-38.42 (49.72)	-31.67 (47.11)	-77.18 (55.79)	-98.70* (58.94)	-93.77* (53.57)	-94.24* (52.23)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using different instruments for the relationship between caseworker belief in clients and health outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.3: Alternative Clustering - Labor Market Outcomes

	<u>t+1 to t+12</u>			<u>t+13 to t+24</u>			<u>t+25 to t+36</u>		
	Job center	Caseworker	Client	Job center	Caseworker	Client	Job center	Caseworker	Client
A. Dependent variable: Employment (1/0)									
Believe in client (1/0)	0.15** (0.07)	0.15** (0.06)	0.15** (0.05)	0.16** (0.07)	0.16** (0.06)	0.16** (0.07)	0.14* (0.08)	0.14** (0.07)	0.14* (0.07)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Earnings (USD)									
Believe in client (1/0)	2945.29** (817.74)	2945.29** (920.88)	2945.29** (897.89)	3815.53** (1129.43)	3815.53** (1510.45)	3815.53** (1582.95)	3484.12** (1579.78)	3484.12* (1918.85)	3484.12* (2053.30)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Education (1/0)									
Believe in client (1/0)	0.07** (0.02)	0.07** (0.03)	0.07** (0.03)	0.08** (0.03)	0.08** (0.03)	0.08** (0.03)	0.08* (0.04)	0.08** (0.04)	0.08** (0.04)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using alternative clustering of standard errors for the relationship between caseworker belief in clients and labor market outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. ** (*) indicates significance at the 5% (10%) level.

Table A.4: Alternative Clustering - Health Outcomes

	t+1 to t+12			t+13 to t+24			t+25 to t+36		
	Job center	Caseworker	Client	Job center	Caseworker	Client	Job center	Caseworker	Client
A. Dependent variable: Painkiller (DDD)									
Believe in client (1/0)	-63.79** (23.20)	-63.79** (19.66)	-63.79** (23.87)	-96.26** (23.45)	-96.26** (23.69)	-96.26** (25.55)	-102.44** (25.91)	-102.44** (27.08)	-102.44** (21.64)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Psycholeptics (DDD)									
Believe in client (1/0)	6.74 (13.30)	6.74 (15.38)	6.74 (18.01)	16.30 (15.88)	16.30 (18.36)	16.30 (19.05)	9.75 (21.33)	9.75 (18.55)	9.75 (17.02)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Medicine used for addictive disorders (DDD)									
Believe in client (1/0)	-21.91* (12.42)	-21.91 (13.82)	-21.91* (13.29)	-30.64** (11.60)	-30.64** (13.17)	-30.64** (13.19)	-28.93** (12.63)	-28.93** (13.47)	-28.93** (12.00)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
D. Dependent variable: Lifestyle medicine (DDD)									
Believe in client (1/0)	-25.79 (45.51)	-25.79 (68.86)	-25.79 (67.23)	-42.76 (54.15)	-42.76 (61.46)	-42.76 (59.91)	-126.84* (71.56)	-126.84** (62.95)	-126.84** (57.28)
Observations	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744	10,744
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using alternative clustering of standard errors for the relationship between caseworker belief in clients and health outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. ** (*) indicates significance at the 5% (10%) level.

Table A.5: Heterogeneity by Age - Labor Market Outcomes

	t+1 to t+12			t+13 to t+24			t+25 to t+36		
	<30	30-50	>50	<30	30-50	>50	<30	30-50	>50
A. Dependent variable: Employment (1/0)									
Believe in client (1/0)	-0.08 (0.24)	0.19** (0.07)	0.06 (0.13)	-0.15 (0.35)	0.21** (0.07)	0.15 (0.14)	0.19 (0.33)	0.15** (0.08)	0.10 (0.16)
Mean of dependent variable	0.15	0.15	0.11	0.23	0.23	0.17	0.28	0.31	0.23
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Earnings (USD)									
Believe in client (1/0)	4530.34 (4028.99)	2820.63** (1069.74)	3303.82* (2001.49)	-780.38 (9119.23)	4709.28** (1793.29)	3554.17 (2796.04)	1250.27 (10214.25)	4360.46* (2338.07)	3393.57 (3769.87)
Mean of dependent variable	1694.61	1725.62	1248.12	3465.36	3598.75	1904.74	4939.64	5286.26	2726.60
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Education (1/0)									
Believe in client (1/0)	0.23 (0.22)	0.04* (0.02)	0.04** (0.02)	0.29 (0.26)	0.04 (0.03)	0.05** (0.02)	0.56* (0.29)	0.04 (0.04)	0.03** (0.01)
Mean of dependent variable	0.17	0.02	0.00	0.22	0.04	0.00	0.20	0.04	0.00
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using different age groups for the relationship between caseworker belief in clients and labor market outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.6: Heterogeneity by Age - Health Outcomes

	t+1 to t+12			t+13 to t+24			t+25 to t+36		
	<30	30-50	>50	<30	30-50	>50	<30	30-50	>50
A. Dependent variable: Painkiller (DDD)									
Believe in client (1/0)	-73.31 (56.63)	-43.92* (23.94)	-94.82 (82.56)	-18.35 (63.35)	-93.01** (28.39)	-92.11 (74.41)	7.76 (65.34)	-108.02** (32.07)	-89.20 (63.25)
Mean of dependent variable	24.59	69.60	107.66	27.14	64.41	94.66	26.57	45.46	60.52
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Psycholeptics (DDD)									
Believe in client (1/0)	97.97 (77.16)	-13.29 (17.81)	63.54 (39.91)	123.32 (104.26)	-3.73 (17.07)	23.62 (49.73)	145.17 (97.11)	-9.82 (16.73)	-15.43 (38.28)
Mean of dependent variable	45.84	31.57	23.46	41.78	28.52	21.66	33.74	20.11	14.21
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Medicine for addictive disorders (DDD)									
Believe in client (1/0)	16.21 (48.43)	-27.15* (14.29)	-21.84 (44.94)	12.26 (45.42)	-42.19** (15.14)	-15.34 (37.48)	33.48 (38.71)	-38.68** (15.42)	-29.65 (37.75)
Mean of dependent variable	17.04	19.67	38.17	14.17	16.59	32.18	12.60	12.37	23.05
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
D. Dependent variable: Lifestyle medicine (DDD)									
Believe in client (1/0)	-93.45 (109.55)	17.47 (69.67)	-223.36 (276.89)	21.66 (81.99)	-3.74 (68.35)	-223.03 (219.75)	30.15 (86.88)	-83.84 (62.08)	-419.21** (197.19)
Mean of dependent variable	37.12	125.72	394.11	33.31	122.64	344.05	30.68	93.01	214.91
Observations	1,452	7,495	1,797	1,452	7,495	1,797	1,452	7,495	1,797
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using different age groups for the relationship between caseworker belief in clients and health outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.7: Heterogeneity by Education - Labor Market Outcomes

	t+1 to t+12		t+13 to t+24		t+25 to t+36	
	No Edu.	Edu.	No Edu.	Edu.	No Edu.	Edu.
A. Dependent variable: Employment (1/0)						
Believe in client (1/0)	0.04 (0.08)	0.19** (0.07)	-0.06 (0.09)	0.29** (0.08)	0.01 (0.10)	0.22** (0.09)
Mean of dependent variable	0.15	0.14	0.22	0.22	0.30	0.29
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
B: Dependent variable: Earnings (USD)						
Believe in client (1/0)	703.69 (1358.65)	4207.49** (1201.39)	-18.85 (2051.57)	6107.86** (2139.27)	-2032.94 (2890.82)	6662.13** (2649.35)
Mean of dependent variable	1593.32	1660.34	3060.00	3394.57	4477.64	4911.12
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Education (1/0)						
Believe in client (1/0)	0.04 (0.03)	0.08** (0.03)	0.08* (0.04)	0.07 (0.05)	0.07* (0.04)	0.08 (0.05)
Mean of dependent variable	0.02	0.05	0.03	0.07	0.03	0.07
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using clients with vocational training, college or university vs those who have high school or below for the relationship between caseworker belief in clients and labor market outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.8: Heterogeneity by Education - Health Outcomes

	t+1 to t+12		t+13 to t+24		t+25 to t+36	
	No edu.	Edu.	No edu.	Edu.	No edu.	Edu.
A. Dependent variable: Painkiller (DDD)						
Believe in client (1/0)	-80.95** (34.57)	-51.35** (23.84)	-169.17** (41.27)	-51.82* (27.03)	-163.20** (41.04)	-64.02** (28.40)
Mean of dependent variable	94.52	59.71	88.38	54.54	60.90	39.04
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Psycholeptics (DDD)						
Believe in client (1/0)	14.23 (23.89)	0.92 (23.76)	-2.21 (22.90)	21.21 (26.10)	-13.40 (21.78)	17.23 (23.86)
Mean of dependent variable	38.26	29.62	33.45	27.40	22.23	20.45
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Medicine for addictive disorders (DDD)						
Believe in client (1/0)	-62.52** (30.50)	-0.19 (11.97)	-78.26** (29.32)	-9.81 (12.33)	-66.96** (25.54)	-11.83 (13.11)
Mean of dependent variable	30.67	19.00	24.58	16.51	16.51	13.23
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
D. Dependent variable: Lifestyle medicine (DDD)						
Believe in client (1/0)	-135.57 (107.58)	20.61 (91.70)	-218.98* (116.95)	51.76 (77.63)	-246.17** (122.36)	-57.48 (69.20)
Mean of dependent variable	193.45	144.25	183.73	132.67	141.09	90.05
Observations	3,141	7,603	3,141	7,603	3,141	7,603
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using clients with vocational training, college or university vs those who have high school or below for the relationship between caseworker belief in clients and health outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.9: Heterogeneity by Prior Medicine Usage - Labor Market Outcomes

	t+1 to t+12		t+13 to t+24		t+25 to t+36	
	No medicine	Medicine	No medicine	Medicine	No medicine	Medicine
A. Dependent variable: Employment (1/0)						
Believe in client (1/0)	0.18** (0.09)	0.14** (0.06)	0.19** (0.09)	0.18** (0.08)	0.23** (0.09)	0.10 (0.08)
Mean of dependent variable	0.18	0.12	0.27	0.19	0.35	0.26
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Earnings (USD)						
Believe in client (1/0)	4255.90** (1504.13)	2211.90** (993.84)	7020.53** (2431.22)	2219.51 (1646.82)	6636.54** (2787.20)	2369.58 (2303.77)
Mean of dependent variable	2177.13	1321.59	4401.68	2639.32	6583.68	3713.80
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Education (1/0)						
Believe in client (1/0)	0.13** (0.04)	0.04 (0.03)	0.09* (0.06)	0.07* (0.04)	0.04 (0.06)	0.11** (0.04)
Mean of dependent variable	0.05	0.04	0.07	0.05	0.07	0.05
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using clients using prescription medicine prior to meeting vs those who don't for the relationship between caseworker belief in clients and labor market outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.10: Heterogeneity by Prior Medicine Usage - Health Outcomes

	t+1 to t+12		t+13 to t+24		t+25 to t+36	
	No medicine	Medicine	No medicine	Medicine	No medicine	Medicine
A. Dependent variable: Painkiller (DDD)						
Believe in client (1/0)	0.36 (8.96)	-96.79** (30.25)	-4.30 (12.58)	-153.44** (36.12)	-5.43 (12.91)	-166.83** (41.33)
Mean of dependent variable	14.34	102.93	16.97	92.68	14.40	63.89
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
B. Dependent variable: Psycholeptics (DDD)						
Believe in client (1/0)	-4.85 (6.45)	13.51 (25.24)	-6.00 (9.25)	26.29 (28.88)	15.88 (13.60)	3.05 (27.33)
Mean of dependent variable	3.67	49.08	6.11	42.88	6.84	29.37
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
C. Dependent variable: Medicine for addictive disorders (DDD)						
Believe in client (1/0)	-3.09 (4.52)	-29.38 (21.77)	-4.27 (7.46)	-44.77** (20.00)	-1.31 (8.40)	-46.91** (20.28)
Mean of dependent variable	3.65	33.57	4.60	27.36	4.21	20.12
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes
D. Dependent variable: Lifestyle medicine (DDD)						
Believe in client (1/0)	11.47 (22.22)	-14.19 (111.04)	-15.92 (26.81)	-41.04 (97.15)	-19.56 (36.16)	-192.71** (96.21)
Mean of dependent variable	18.19	242.21	24.42	220.88	24.24	153.01
Observations	4,008	6,736	4,008	6,736	4,008	6,736
Job center team, FE	Yes	Yes	Yes	Yes	Yes	Yes
Full controls	Yes	Yes	Yes	Yes	Yes	Yes

This table presents 2SLS estimation results using clients using prescription medicine prior to meeting vs those who don't for the relationship between caseworker belief in clients and labor market outcomes over three-year periods (t+1 to t+12, t+13 to t+24, and t+25 to t+36). All models include job center fixed effects and control for the full set of covariates. Standard errors are clustered at the caseworker level. ** (*) indicates significance at the 5% (10%) level.

Table A.11: Does Caseworkers Usage of Job-orientated Activation Shape Future Beliefs?

	Caseworkers avg. belief in clients, 2015 & 2016		
	(1)	(2)	(3)
Job-orientated activation rate, 2013 & 2014	0.241* (0.129)	0.019 (0.151)	0.009 (0.199)
Caseworkers avg. belief in clients, 2013 & 2014		0.482** (0.146)	0.426* (0.239)
Observations	125	125	125
Mean of dependent variable	0.283	0.283	0.283
Jobcenter FE	Yes	Yes	Yes
Covariates	No	No	Yes

*Notes: All Regressions contains jobcenter fixed effects. It measures if caseworker usage of job-orientated activation in the first years affect the future belief in clients (year 2015 and 2016). Robust standard errors in parentheses. ** $p < 0.05$, * $p < 0.1$*