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The psychiatric mental health nurse practitioner in the general practice: a realist evaluation multiple case study

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Abstract

Background Mental health problems are highly prevalent worldwide and the mental health system faces significant gaps in treatment coverage due to stigma, professional shortages and accessibility issues. In the Netherlands, patients first visit their general practitioner (GP) for mental health problems, with an increasing number of people seeking mental health counselling and treatment in general practice. Dutch general practices have been experimenting with deploying psychiatric mental health nurse practitioners (PMHNP) to enhance mental healthcare accessibility. How to best deploy this profession in the general practice team and everyday care, is yet unknown.

Objective This study aims to understand how deployment of the PMHNP in the general practice works and how it contributes to the accessibility and quality of mental primary healthcare and job satisfaction of professionals in the general practice.

Methods This multiple case study used principles of realist evaluation methodology for data collection and analysis focusing on context, mechanism and outcome (CMO). Seven general practices employing a PMHNP, were included. Data was collected through observations, interviews and group discussions with professionals working in the general practice and patients treated by the PMHNP. Cross-case analysis involved work sessions with professionals of these seven cases.

Results This study identified three mechanisms that provide insight into how deploying PMHNP contributes to improved experienced accessibility and quality of mental health care, enhances job satisfaction and reduces workload especially for the GP: (1) motivation and investment; (2) familiarity and trust; and (3) equivalence and autonomy. These mechanisms were triggered in a context with the presence of (1) a vision on mental health care in general practice, (2) physical attendance of the PMHNP, (3) a patient population suited to the expertise of the PMHNP, and (4) financial possibilities.

Conclusion Participants in this study believe a transition in general practices is necessary to provide sustainable, lowtreshold mental healthcare in primary care setting. They see the PMHNP as the professional to fill this gap. To

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optimally deploy the PMHNP and ensure accessible, high-quality mental healthcare, the mechanisms of (1) motivation and investment, (2) familiarity and trust, and (3) equivalence and autonomy should be activated.

Keywords General practice care, Psychiatric mental health nurse practitioner, Mental health care, Realist evaluation

Introduction

Mental health problems are highly prevalent in all countries [1]. An estimated 970 million people worldwide have a mental health problem, of which depression and anxiety disorder are the most common [1]. Recognition of mental health problems as leading causes of disease burden is growing [2], due to the possible impact on all areas of life and the ability to participate in the community [3]. The prevalence of mental health problems and the accompanying costs of care are rising globally; the latter is estimated to account for more than half of the economic burden of disease over the next two decades – more than cancer, diabetes and chronic respiratory diseases combined [4]. Despite the urge for action, the mental health system has gaps in its treatment coverage [1], due to stigmas on mental health, professional shortages in mental healthcare, and the location (presence and accessibility) of specialised mental healthcare [5–8]. Accessibility of mental healthcare is suboptimal; five out of ten people fail to access required care in high-income countries and this number even rises to nine out of 10 people in low- and middle-income countries [9].

The high prevalence, cost and limited accessibility of mental healthcare is also of concern in the Netherlands [10]. In the Netherlands, patients with mental health problems first visit their general practitioner (GP) (See: box 1), who serves as the gatekeeper of care. The GP could refer the patient to the general practice mental health professional (GP-MHP), who can offer a limited number of consultations to support the patient to become self-sufficient again [11]. The GP-MHP is educated at post-bachelor level and works in accordance with national guidelines. The task of the GP-MHP is to explore the need for treatment and to offer guidance and short-term treatment. If more diagnostics or treatment is required, the GP will refer the patient to specialised mental healthcare (MHC) institutions. The number of people with mental health problems seeking counselling and treatment in the general practice, is increasing enormously [12, 13]. The increase is partly due to referrals from specialised mental healthcare back to GPs, which often concerns people with stabilised comorbid, complex psychiatric, psychological, somatic and social problems. Long waiting lists in MHC institutions also create pressure on the general practice, making it necessary for professionals within general practice to bridge the gap in patient care during the waiting list period [13, 14].

The GP and GP-MHP both indicate that they do not always have sufficient knowledge, skills and competencies to provide appropriate care to patients with complex mental health problems [13]. In recent years general practices have started with the implementation of the psychiatric mental health nurse practitioner (PMHNP), alongside a GP-MHP. PMHNP have a broader expertise in mental healthcare than GPs and GP-MHPs. PMHNPs in the Netherlands have an independent authority to diagnose and treat patients [15]. Currently, about 1,600 PMHNPs are working within MHC institutions in the Netherlands [16] and an estimated 50 PMHNPs within general practices [16, 17].

Studies on the deployment of PMHNPs are scarce, both internationally and in the Netherlands. Preliminary research shows that the PMHNP is able to treat complex mental healthcare problems as an independent practitioner in the general practice, whether or not in collaboration with MHC institutions [18, 19]. The treatment interventions applied by the PMHNP are very diverse and depend on the patient population and expertise of the PMHNP. Examples of treatment interventions include crisis intervention, relapse prevention, psychotherapy, psycho-education, and (psycho)pharmacotherapy prescription and follow-up [19]. Although treatments are tailored to the patient population, there appears to be great diversity in the way the role of the PMHNP is fulfilled, which might hinder scaling up of PMHNP nationally. The PMHNPs are pioneering to organise their work in the general practice team with regard to the division of tasks, roles and responsibilities between the different team members in order to improve the quality and accessibility of mental healthcare in the general practice [19].

It is still unknown how the PMHNP can be best deployed in general practice and what its optimal position would be to best contribute to the accessibility and quality of mental healthcare in the general practice. Therefore, this study aims to understand how the deployment of the PMHNP in the general practice works and how it contributes to the accessibility and quality of mental healthcare in the general practice. It also investigates how professionals themselves experience the deployment of a PMHNP, in terms of their job satisfaction and workload.

Box 1: General practice and mental healthcare in the Netherlands

Mental health in numbers:

•Approximately 43% of Dutch people will experience one or more mental health problems during their lifetime [10].

•About 84,000 people are waiting for a first appointment or treatment in the mental healthcare system. Just over half of all people, over 42,000, have to wait longer than the agreed maximum standard of 14 weeks [20].

• The use of mental health care increased from 6% in 2007–2009, to 10% of the total care provided in the Netherlands by adults in the total population in 2019–2022. [10].

Mental healthcare in general practice:

•Every Dutch citizen is obliged to be registered with a GP and to have health insurance which covers healthcare in the general practice.

•The GP has a gatekeeper function in healthcare; they are the first point of contact and the primary place to seek professional care for both physical and mental health problems. The GP determines what care is needed and refers to a specialist if necessary.

•The GP treats minor mental health problems in collaboration with a GP-MHP. For this, the GP receives additional funding from the government [21, 22].

•The GP can refer a patient to basic mental healthcare or the specialised mental healthcare. Depending on the severity of the mental health problems [22].

Basic and specialised mental healthcare:

• Treatment of mild to moderate mental health problems takes place in the basic mental healthcare. Treatment within the basic mental healthcare may consist of conversations with, for instance, a psychologist or psychotherapist. Internet treatment (e-health) is also possible.

• For more severe mental health problems, the general practitioner, occupational physician, youth doctor or medical specialist refers to the specialised mental healthcare [22].

Methods

Study design

This is a multiple case study (phase 1), including a cross-case analysis (phase 2) (Fig. 1), following the principles of the realist evaluation approach. Realist evaluation focuses on explaining how and why a complex intervention works or does not by asking: 'What works for whom in what circumstances and how?' [23]. In this study, a case is a general practice where a PMHNP works. The implementation of the PMHNP in general practice care is considered the intervention. How and why the intervention works, for whom and in what circumstances was studied by identifying the influential components in context (C), mechanism (M) and outcome (O) and finding the relationships between these components (CMO). Contextual factors are those aspects that contribute to the environment in which mechanisms can get triggered, so that they may produce certain outcomes. A CMO configuration can be filled in as follows: 'If (C), then (O), because (M)' [23]. A realist evaluation approach was chosen because of the complexity of this intervention and to understand in what kind of environment and through which underlying mechanisms the deployment of the PMHNP in the general practice works. No initial theory was developed prior to the study, but a theory was developed based on the results. For diligent practice and reporting, we used both RAMESES II reporting standards for realist evaluations [24] and COREQ reporting guidelines for qualitative research [25].

Participants

A total of seven cases were included, spread across the Netherlands in various provinces, in both rural and urban areas. The aim in each case was to include, besides the PMHNP, a GP, collaborating psychiatrist MHC institution, patients being treated by the PMHNP and optionally a GP-MHP, general practice manager and other stakeholders. Included participants varied per case due to team composition and external collaborating professionals. Participants were approached by email or telephone through purposive and snowball sampling through the researchers' network and advisory board. The PMHNP, in turn, provided contacts with their patients and collaborating professionals. There was no refusal or dropout among the participants.

The participants in the cross-case analysis were all professionals in patient care, healthcare policy or (mental) healthcare education and provided input and reflection on the findings. We aimed to include a PMHNP, GP, psychiatrist, GP-MHP or manager of a general practice or healthcare organisation.

Research team & network

A project team of six members from an existing network developed through previous research collaborations, was consulted by the research team every six weeks. This project team represented the Professional Association for Nurse Practitioners, National Knowledge Centre for General Practice and the PMHNP education programme. They gave input on selection of the cases, development of the interview guide, the case reports and interpretation of the data analysis. An advisory board advised the research team twice during the study on the interview guide and data interpretation. Participation was optional, but invited members included professors in mental healthcare, community nursing and mental healthcare nursing; education programme coordinators and senior lecturers; and policy officers from several national care organisations. The executive researchers (AT, VL, ND, AV) were experienced in qualitative research, had previously studied Realist Evaluation and participated in peer discussions on Realist Evaluation research.

Data collection

From May to December 2022, data was collected in the seven general practices through observations, interviews, document research on tasks and responsibilities of the PMHNP and group discussions. Data was collected in each practice over four to six weeks. All participant were informed both verbally and in writing, using

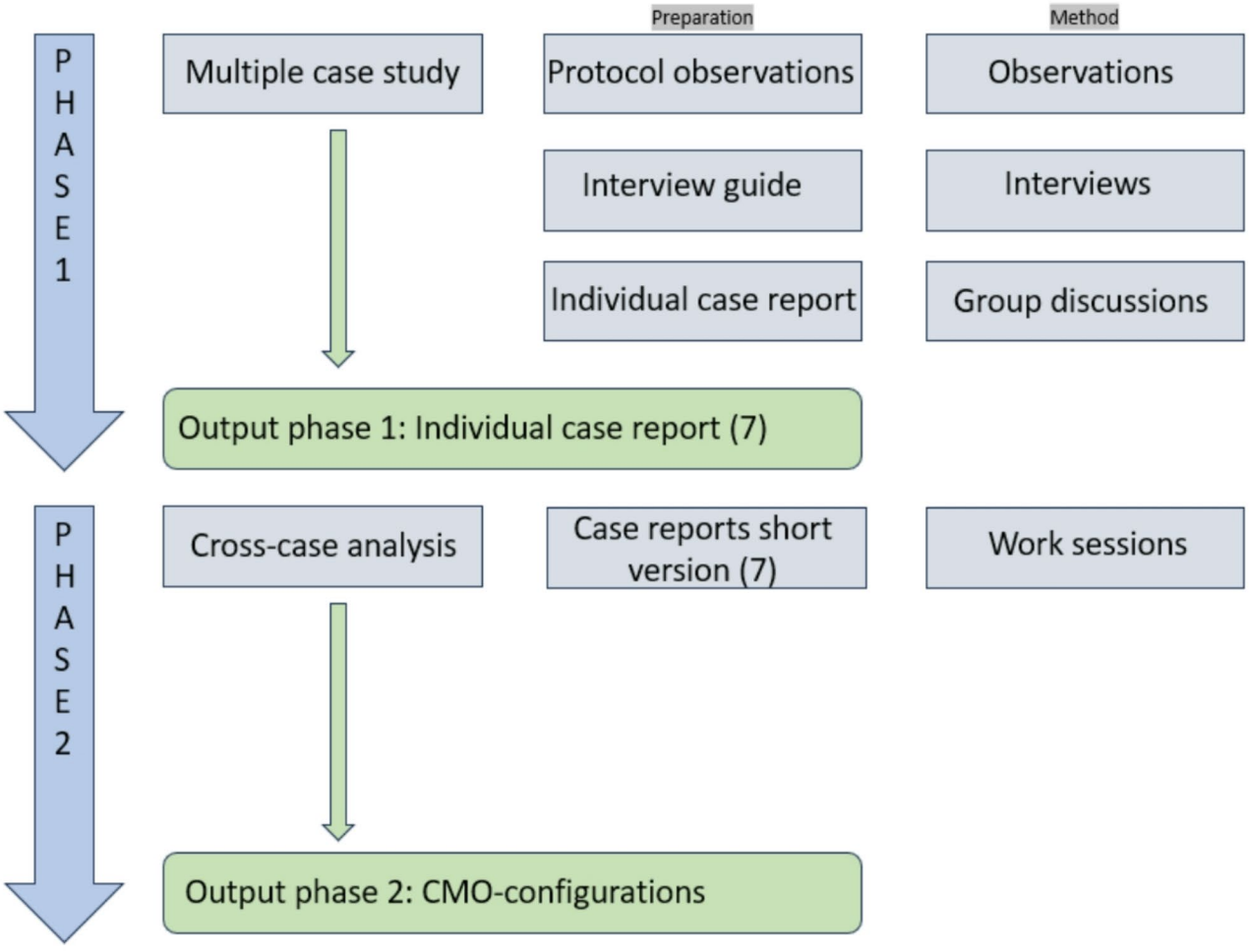

Fig. 1 The research procedures in phase 1 and 2: preparation an method for data collection + output

a information letter including the study purpose. During the cross-case analysis, data was collected within a period of three months in three work sessions. Figure 1 shows the outline of the data collection. Data saturation was sought by using observations, interviews, group discussions and a cross-case analysis.

A protocol was created to observe the PMHNP's work [see Additional file 1], by two researchers (AT, VL) over eight hours, spread across two days. Both researchers conducted observations in each case. The observations were done to understand the PMHNP in the natural setting, including the context, behaviours, decision-making processes, patient consultations, collaboration and interactions with team members and stakeholders of other (mental) healthcare services. The researchers made their presence and purpose known to each encountered patient and professional. They did not actively participate, only taking notes on the themes mentioned above. Afterwards, clarification questions were posed to the PHHNP and, if necessary, observations about interaction with patients and other healthcare professionals were further explored in interviews. All observations were summarised by the researcher who performed the observation.

The PMHNPs were requested: job description, collaboration agreements with professionals, other practices/organisations and any relevant documents regarding their tasks and responsibilities. These documents were screened for agreements between the practice and the PMHNP.

An interview guide was developed, based on the elements of context, mechanisms and outcome [23] [see Additional file 2] by the researchers. The advisory board provided feedback from different perspectives. All semi-structured interviews were conducted by two researchers. No notes were made during the interviews. The interview with the PMHNP followed after both researchers observed the PMHNP. The interviews were audiotaped and summarised by two researchers, then sent to participants for member check. The interviews with the PMHNP and GP were transcribed verbatim by a transcription agency.

Each case concluded with a group discussion under the guidance of the two researchers, with the participants to verify the case report. Participants were asked for clarification by the researchers and were able to add nuances when preferred. Each group discussion was audio-taped and summarised. New or revised information was updated in the case report.

Data analysis

Single-case analysis

Data was analysed inductively, based on thematic analysis [26] supported by the software program ATLAS.ti. To ensure credibility, the PMHNP and GP interview transcripts from the first three cases, were inductively coded by two researchers to agree on codes and develop a code book [see Additional file 3]. Subsequently, summaries of the other interviews and observations were coded by one researcher who was not the interviewer or observer. The analysis was iterative, and researchers maintained a log to track code additions or adjustments and remarkable findings as input for interviews. Each case was reported comprehensively by the researchers, describing the deployment of the PMHNP based on interview, observation and document analysis. Reports were shared with the concerning participants before the group discussion. Several CMO configurations were prepared and presented during the group discussion. This led to deeper exploration of mechanisms, related to context en outcome factors. The CMO configurations were revised based on the group discussion and were used as input for the cross-case analysis [23], in the second phase of the study.

Subsequently, the researchers independently identified Context(C), Mechanisms(M) and Outcome(O) in each case report. Findings were discussed with principle researcher AV to achieve consensus about CMO, preparing for the cross-case analysis. Simultaneously it was a learning process for the researchers.

Cross-case analysis

Phase two consisted of three work sessions of two to three hours with professionals and three researchers (AT, AV, ND) to analyse patterns across the seven cases. Each case report was summarised into maximum five pages by a copywriter and was accompanied with a list of all relevant contextual- (C) and outcome factors (O). The case summaries and list were sent to the participants, to prepare them for the cross-case analysis. The work sessions were used to identify the working mechanisms (M) shared between all cases and to define the final CMO configurations. The work sessions were not audio-taped or summarised.

Session 1: specifics of the cases and factors that influence the deployment of the PMHNP were discussed. Output was a list with the most important contextual factors (C) and outcomes (O) defined by the participants of the work session and additional individual interviews.

Session 2: focused on the coherence between contextual factors (C) and outcomes (O) derived from session 1, and resulted in preliminary hypothesis about six underlying 'mechanisms' (M) that explain how this works.

Session 3: the six mechanisms (M) were (re)defined and linked to practical guidelines.

Additionally, the researchers conducted individual interviews with professionals who could not be present during the work sessions. Summaries were member checked and incorporated into the work sessions.

Consequently, the final CMO configurations were described by the researchers. These configurations provided the base for the theory of the PMHNP in general practice and to understand how the deployment of the PMHNP in the general practice works and how it contributes to the accessibility and quality of mental healthcare in the general practice.

Results

Characteristics of the seven single cases and the data collection from the multiple case study are described in Tables 1 and 2, respectively. In the majority of the cases no documents were available, except for two cases, for which PMHNP job descriptions were provided. In total 60 interviews were conducted, ranging between seven to ten interviews per case, with an average duration of 30 to 60 min. There were no repeated interviews. Data saturation within the cases was reached resulting in rich data to analyse patterns and coherence between contextual and outcome factors and mechanisms. Both minor and major themes are described. There were no inconsistencies between the interviews, observations and documents. The participants of the cross-case analysis can be found in Table 3.

CMO configuration

The analysis of the multiple case study and subsequently the cross-case analysis resulted in outcomes of the deployment of PMHNP and the underlying mechanisms and contextual factors that play a role in the deployment of the PMHNP in the general practice. Figure 2 illustrates how the contextual factors and mechanisms influence each other, how the mechanisms can be present to a greater or a lesser extent, and how the configuration between these two impacted on the outcomes. Each factor can be placed in the sentence 'if' (c), 'then' (o), 'because' (m). In the paragraphs below first the outcomes, followed by the underlying configuration of mechanisms and contextual factors will be described.

Table 1 Characteristics seven cases

Characteristics	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Psychiatric Mental Health Nurse Practitioner (PMHNP)							
Age (years)	62	39	56	47	51	57	63
Education*	SPN, MANP	BN, MANP	Inservice, SPN, MANP	SPN, *GP-MHP*, MANP	BN, SPN, Social Work, MANP	Inservice, SPN, *GP-MHP*, MANP	BN, Nursing Sciences, MANP
Work experience mental healthcare (years)	41	17	34	30	27	30	41
Work experience primary care (years)	6	3	4	9	14	4	8
General practice							
Type of employment PMHNP	Freelance	Employed	Freelance	Employed	Employed	Seconded	Freelance
Number of work hours (per week)	8	12	6	8	40	12	4
Time per patient consultation (minutes)	30–45	20–40	60	45	45	30	45
Team composition (n):							
General practitioner	2	8	1	6	8	3	3
Practice manager	1	1	1	1	1	1	1
Doctor's assistant	3	4	3	5	10	5	4
NP general health	0	2	0	1	2	0	0
GP-physical healthcare professional (GP-PHP)	2	2	2	4	4	1	2
PMHNP	1	1	2	1	1	1	1
GP-MHP	0	1	0	1	1	0	1
Number of patients registered	3,000	4,800	2,760	7,000	10,300	4,400	2,550
Type of area	Rural	City	Rural	Rural	Rural	City	Rural

*SPN = social psychiatric nurse; MANP = master advanced nursing practice; BN = Bachelor of Nursing; inservice = the education program to become a nurse before 1970; GP-MHP = general practice mental health professional

Table 2 Data collection multiple case study

Data collection	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Number of interviews	9	9	8	10	9	7	8
Occupation participant interview (n):							
General practitioner	1	1	1	1	1	1	1
Practice manager	1	1	1	1	1	1	1
PMHNP	1	1	3	1	1	1	1
GP-MHP	0	1	1	1	1	0	1
GP-PHP	0	0	0	1	0	0	0
Psychologist	0	1	0	0	0	0	0
Psychiatrist	0	1	0	1	0	0	0
Psychotherapist	1	0	0	0	0	0	0
Psychosomatic therapist	1	0	0	0	0	0	0
Social psychiatric nurse	0	0	0	0	1	0	0
Social worker	1	0	0	0	1	1	0
Municipal counselor social support	0	1	0	0	0	0	1
Patient	3	2	2	4	3	3	3
Number of participants group discussion	6	3	5	5	5	3	5

Table 3 Participants cross-case analysis

	PMHNP	GP-MHP	GP	Manager	Patient	Educator PMHNP	Project leader policy GP care	Researcher (external)
Participants present during work sessions:								
First work session	2	0	0	1	0	1	0	1
Second work session	2	2	0	1	0	1	1	1
Third work session	3	1	0	1	0	1	1	1
Additional individual sessions with	1	2	1	0	1	0	0	0

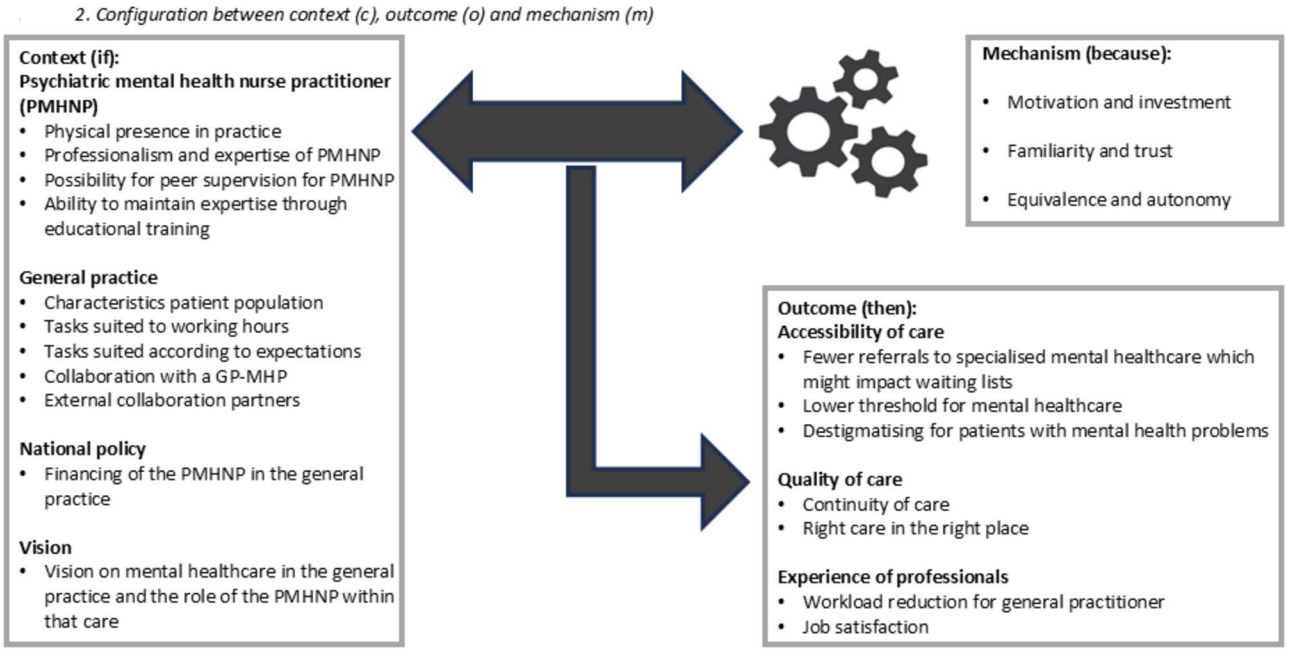

Fig. 2 Configuration between context (c), outcome (o) and mechanism (m)

Outcomes - effects of the deployment of the PMHNP in general practice

Accessibility of care

Professionals in general practice believe the employment of a PMHNP reduces waiting lists, as they need to make fewer referrals to specialised mental healthcare than before. Moreover, patients experience the mental healthcare they received in the general practice by the PMHNP to be more accessible, due to a lower threshold and destigmatisation. The lower threshold relates to familiar territory, an existing bond of trust with the GP and less need to repeat information due to short lines of communication between the PMHNP and GP. Receiving mental healthcare in the general practice is experienced as less stigmatising because of the accepted normality and diversity of matters in visiting a general practice. Visiting MHC institutions is concerned with certain social ideas, according to patients.

"We come from a time in which we thought, if you are going to a psychiatrist of psychologist, you are crazy. That is less now, but still when you walk into an institution within mental health care, you feel there is a lot going on with you. I don't experience that here in the general practice, despite being treated by the PMHNP. I think that contributes to the accessibility, but also the treatability and how it makes people feel." (patient, case 3).

Patients often felt that they had received better treatment by the PMHNP in general practice due to increased accessibility of care compared to their treatment in specialised MHC institutions. Several participants, including one patient, mentioned potential unintentional effects of the implementation of the PMHNP in general practice, meaning supply might create demand and longer treatment because there is no financial incentive.

Quality of care

Regarding the quality of care, participants found having the PMHNP working in general practice to have several benefits regarding the continuity and location of care. For professionals, continuity of care relates to the velocity and the adequacy in time of receiving help, the direct visibility of the patient and short lines of communication between professionals. The latter allows professionals to collaborate and coordinate the care, by exchanging treatment progress, consulting and complementing each other on physical, social and mental wellbeing expertise (GP and PMHNP, respectively). A potential unintended effect is the limit in the ability to provide continuity of care when working part-time like most PMHNP (Table 1), such as follow-up of (psycho)pharmacotherapy.

"If you as a patient get shifted from pillar to post after the referral by the GP to the specialised mental health, before you receive the care that you need, that is tedious. Then it is nice that there is a professional within the general practice who can start the treatment. Especially when this professional has the possibility to prescribe the right drugs and therapies." (patient, case 5).

Location of care, rather referred to as 'the right care in the right place', concerns targeted referral, estimated by the well qualified and specialised PMHNP. This was mentioned by both professionals and patients. Professionals from outside the general practice, with whom

the PMHNP collaborates, emphasised the value of the collaboration as more targeted, because they carry out the same plan and agreements, plus complementing on expertise and resources as well as their personal connection with the patient.

> *"What a patient requires is care fast and close to home. First of all a consultation in which the situation is assessed. I believe the PMHNP can do that well, to estimate whether they can treat the patient or if more specialised intervention is needed." (psychiatrist, case 7).*

Experience of professionals

Interviewed professionals mentioned two important effects of the deployment of the PMHNP in their general practice: workload reduction, specifically for the GP, and increased job satisfaction.

Workload reduction was the consequence of the PMHNP taking over patients with mental health problems and corresponding responsibilities. Several GPs felt more confident and experienced less stress in treating patients with mental healthcare problems when they collaborated with a PMHNP, because the PMHNP had knowledge or gave them additional insight. On the other hand, a potential unintended effect of PMHNP implementation in general practice might be, according to participants, loss of affinity with and knowledge about mental health problems by the GP.

> *"I am very happy that the PMHNP started here. We have a busy practice with a lot of patients and we don't have time to talk to all those patients with mental health care problems. PMHNP now handles the mental health care problem consultations, plus she can prescribe drugs and it is nice to be able to consult her about where to refer a patient if I do see one myself." (general practitioner, case 2).*

The PMHNP's job satisfaction was positively influenced by working in the general practice, due to the different type of patients and work culture in comparison to specialised mental healthcare. The GP, the GP-MHP and external professionals also mentioned increased job satisfaction, because of their collaboration with the PMHNP, which offered the chance to discuss and offer various perspectives on cases. Some participants said they learned from the PMHNP, providing a deepening of their profession.

Contextual factors and mechanisms - a configuration

Three mechanisms contributing to the outcomes were identified. These were activated by the presence of certain contextual factors that influenced the deployment of the PMHNP in the general practice. These mechanisms, including the associated contextual factors, are explained below for each mechanism.

Motivation and investment

Urgency was the main motivation for deploying a PMHNP in the general practice in this study. GPs were forced to act on the increasing pressure related to their patient populations' mental health problems. This enhanced the need and/or wish for more expertise, feeling the responsibility to provide patients with appropriate care. However, none of the general practices were specifically looking for a PMHNP. PMHNPs approached a general practice due to their desire to (partly) change the field of work, coming from a specialised mental healthcare setting. In some cases a GP-MHP left the practice, which opened a new position for a professional with mental health experience. This gap was filled by a PMHNP instead of GP-MHP. In one case a GP-MHP completed the education to become a PMHNP during the period of employment in the practice. Alternatively, the wish for specific knowledge (on for example ADHD or addiction) or previous dissatisfying experiences with a GP-MHP were reasons to look for a professional with appropriate level of education or skills.

> *"With our previous mental health professional we felt people were not sufficiently treated. After the decrease in availability of psychologist and social workers the urgency arose to find a new mental health professional. Our colleagues from another practice worked with the PMHNP and we had heard that this was satisfactory. We asked her to come by and she explained what it was she could offer as a PMHNP, with her education and experience. Afterwards we thought 'let's try'. She absolutely lived up to it." (general practitioner, case 1).*

The benefits of the implementation of the PMHNP in general practices were experienced stronger when the PMHNP worked longer in the practice, implying the catalytic power of experience in general. Due to the PMHNP's capability to handle the caseload of more complex mental healthcare problems, decisions about patients' best care were now more based on utility rather than urgency. Most participating GPs would employ a new PMHNP in the future, should the current one leave or retire.

Subsequently, participants mentioned the added value of actively formulating a vision (C), based on a broader perspective on quality of mental healthcare, aside from potential (future) urgency. However, such vision (C) was lacking in the practices, which became evident during the study. GPs currently working with a PMHNP greatly

value their independence, specialised skills regarding prescribing drugs and therapy, as well as their awareness of and active involvement in the network of specialised mental healthcare (C).

> *"You should not want to think in boxes. I actually think specialised mental healthcare has no oversight on the general practice, and it is therefore a good thing you bring a professional into the practice with knowledge about the structure of the GP setting as well as the knowledge to function as a gatekeeper for specialised mental healthcare. This professional has an added value, because it prevents us as a practice to 'pass the buck' when we lack mental healthcare support." (general practitioner, case 6).*

All the practices in this study were pioneers and showed a willingness to try out this new development. The participants in this study experienced the development as searching together for what works, because there is not a clear job profile for the PMHNP in the general practice.

> *"You can think long and hard about which tasks within the practice are suitable for the PMHNP, but in the end these things take time and need to grow in day to day practice." (general practitioner, case 4).*

The lack of sufficient budget and structural financial embedding by health insurance companies for PMHNPs in the general practice (C) influences the motivation of the actual employment. Several PMHNPs deliberately accepted lower salary, because they believed in the development they participated in.

> *"An important bottleneck is the financing. The incentive should not be 'what do I earn from it', but 'what does it provide in benefits for the patient'. The implementation of the PMHNP needs subsidising, that would also stimulate the personal development of employees, for instance." (practice manager, case 2).*

Motivation partly determines the degree of investment (time and finances) in the actual deployment process of the PMHNP in the general practice. Some cases presented tension between the time it takes to develop the novel function and the existing pressure of the increasing patient requirements (C), for which the PMHNP is sometimes overqualified. In other cases due to expressed mutual commitment of the GP and PMHNP, despite financial barriers (C) and counter arguments of the umbrella organisation (C), the PMHNP felt largely supported by the GP.

> *"I fell into a comforting environment. They had hired me with the intention that something fun and new was going to happen. So the breeding ground for good collaboration was there." (PMHNP, case 7).*

Familiarity and trust

Familiarity is defined by the participants as "knowing the profession of the PMHNP and its associated roles, and the difference between the PMHNP and other professions in mental healthcare and general practice team". Almost none of the participants knew or had previously worked with a PMHNP. Again, a vision (C) on suitable mental healthcare in general practices and the potential contributing value of a PMHNP (C) would help to ensure a better alignment of needs, possibilities and benefits.

The physical presence of the PMHNP in the general practice (C) allowed participants to become familiar with the PMHNP, both as a person and in terms of the profession. Experiencing professionality and expertise (C) facilitated the allocation of tasks to the PMHNP.

Trust is defined as "relying on the capabilities and the professional judgement of the PMHNP and believing the patient will receive the best possible care." Trust is enhanced by familiarity and regarded as a precondition for the optimal deployment and engagement of the PMHNP, because responsibilities and tasks need to be allocated. The cases revealed that trust was not necessarily present from the start and needed time to grow. Several personal characteristics of the PMHNP (C) were considered helpful in developing trust: professionalism, independence, approachability, competence, and, trustworthiness.

Regarding the solitary nature of mental healthcare in the general practice, a structure around the PMHNP enabling for instance peer supervision sessions or educational training provides (C) a safety net. This network is functional in case load complexity and supportive for the growth of trust in the PMHNP, when they acknowledge their own limits and consult peers or a specialist for help.

> *"I get the feeling the PMHNP knows very well what she can and cannot do. Plus, every month there is a meeting scheduled between the PMHNP with either the GP or psychiatrist. I think that was a good suggestion from the PMHNP, because it is important the GP and psychiatrist most of all trust that consultations, on a medical level, are going well." (practice manager, case 4).*

Equivalence and autonomy

Autonomy of the PMHNP in a solo work environment with approachable colleagues and short lines of communication allows the PMHNP to reach its full potential. In addition, equivalence experienced by the PMHNP,

with intercollegiate collaboration rather than supervision, with the ability to be autonomous and the lack of hierarchy, contributes to this. PMHNPs feel the space to develop their new role, which is endorsed by GPs as an important way to stimulate this innovative development.

> *"They are and will remain PMHNP, which means they have their own treatment responsibility. When I go and keep a close watch on everything it will not work. Professionals need to get their own space in order to be successful." (general practitioner, case 3).*

Autonomy and equivalence as mechanisms were triggered by collaboration between the PMHNP and the GP and, optionally, a GP-MHP (C). Although several cases employed both a PMHNP and a GP-MHP, day to day practice reveals no self-evident collaboration between these two professionals (C). This was largely dependent on lack of mutual time. The experienced autonomy and equivalence of the PMHNP outside the practice (C) is influenced by the pre-existing PMHNP network and the network of professionals connected to the general practice, co-determining the frequency of consulting and possible (mutual) referring of patients. The fact the PMHNP knows the language and the way within (specialised) mental healthcare (C) is largely experienced as an advantage in perceived autonomy by the PMHNP and contributes to equivalence in collaboration with (specialised) mental healthcare professionals.

Equivalence in collaboration, within the general practice as well as with the mental health care system, contributes to optimal patient treatment, mainly due to experienced equivalence by the PMHNP and its autonomous role.

> *"I can be the binding factor, because I know what 'language' they speak in the mental health care system." (PMHNP, case 1).*

Availability for colleagues, getting acquainted, consulting a professional or sharing findings are all issues that influence the experienced feeling of equivalence and autonomy by the PMHNPs. This leads to possibilities to proactively invest in the professional network by PMHNPs.

Discussion

This study provided insight into how the deployment of the PMHNP in the general practice works and how it contributes to the accessibility and quality of mental healthcare in the general practice. It also showed how professionals themselves experience the deployment of a PMHNP, in terms of their job satisfaction and workload. In the seven cases studied, the engagement of PMHNPs resulted in improved access and quality of care, improved job satisfaction for both GPs and PMHNPs, and reduced workload for GPs. These results were observed in environments characterised by specific contextual factors, including vision, funding and team composition. These context factors triggered the mechanisms motivation and investment, familiarity and trust, and equivalence and autonomy. These underlying mechanisms are triggered by the context factors to contribute to the accessibility and quality of mental healthcare.

Quality of care delivered by NPs is highly valued by professionals and patients. In this study as well as in the systematic reviews of Van Erp et al. [27] and Laurant et al. [28]. The latter one, which included 18 studies with NPs in primary care, found equal, or even better quality of care, in comparison to solely GPs. Plus, the review concluded that NPs probably achieve higher levels of patient satisfaction, due to an increased time per consultation compared to the GP. In the current study, the PMHNPs also have substantially more time per consult (see Table 1), which might contribute to the positive outcomes.

The predominantly positive results with the deployment of the PMHNP in general practice is explained by the sense of urgency, combined with the autonomous role of the PMHNP. Deployment of a PMHNP prevents referrals of these patients to mental healthcare institutions. This is confirmed by Van Erp et al. [27], who found that NPs working in primary care plus (hospital care in a primary care setting) prevent referrals to hospitals and led to more accessible care. NPs in these kind of settings, delivering preventive care and hospital care at the GP setting are used to craft their job in the general practice. They discover which needs in professional care are present and which are not, actively crossing into the network of professionals surrounding the patient. They ultimately fulfil the role of boundary crosser, as they combine knowledge and expertise of the general practice with MHC institutional settings. This attitude is crucial to deliver the best patient care within primary care setting [29].

The question how to deploy the PMHNP in the general practice cannot be answered unequivocally. The deployment depends on many contextual factors. This was also emphasised by the PEPPA framework, a framework for implementing advance nursing roles [30]. This framework defines corresponding identified contextual factors that enable the mechanisms to genuinely work, such as patients, healthcare provider, team, organization and healthcare system. Comparable contextual factors are described in a systematic review [31].

The results of our study show the influence of the presence of the context factors. Absence of one or more context factors is associated with barriers for implementation

of PMHNP in general practice, such as not fully utilising the scope of practice of the PMHNP or no collaboration between the PMHNP and the GP-MHP, because one or more mechanisms are not triggered. Subsequently, this can have an impact on the accessibility and quality of mental healthcare and experiences of professionals. Previously shown barriers for the implementation of NPs in primary care are: lack of team support, staff work load, responsibility, lack of confidence in competence and funding for the role [32]. While the latter is also defined as a barrier by Van Erp et al. [27], Van der Biezen et al. [33] describes that barriers are caused by hesitancy in delegating responsibility and unfamiliarity with the profession. Opposite to barriers, facilitators for implementation are known, such as: ability to collaborate, positive beliefs in regards to the competences of the NP, expertise of the PMHNP [32]. Additionally, when collaboration with multiple caregivers is experienced successfully, this is considered a facilitator [27]. Both barriers and facilitators correspond with the contextual factors identified in this study, implying that implementation strategies should aim at the creation of optimal conditions for the employment of the PMHNP.

Despite the positive effects, this study also highlights the ongoing efforts of the GPs and PMHNPs to optimise the role of the PMHNP within the general practice. They are actively engaged in job crafting, reshaping tasks, dividing responsibilities and collaborating to better align with the specific needs and goals within the practice. Job crafting, beside it being necessary, is about resourcefulness and the active changes professionals make to their own job designs and can result in different positive outcomes, such as job satisfaction [34]. This demands autonomy of the professional. The PMHNPs are interested in developing their nursing roles within general practices and are challenged to craft their own job profile in collaboration with the GP amidst changing context. It requires pioneering efforts from both the PMHNP and the GP, considering professional, legal, financial and structural factors, as well as specialised mental healthcare context. The PMHNPs in this study needed to experience trust, equivalence and autonomy to be able to develop and explore where they can make a contribution with their unique experience and expertise, to develop their profession within the general practice. Chouinard et al. [35] also argue that the best structure for integration of a PMHNP is one allowing room for adaptation.

Strengths and limitations

Strengths of the study included prolonged engagement through data collection spanning 4–6 weeks at each practice, utilization of multiple methods for triangulation (e.g., observations, interviews, group discussions, cross-case analysis), purposive sampling for interviews, and member checking after each interview. Additionally, coding of interview transcripts involving PMHNPs and GPs in the first three cases was conducted by two researchers (AT, VL) to ensure agreement and form a code book. Peer debriefing was also employed, supported by regular project team and advisory board meetings, aiding in interview guide development and contextualizing data within societal context [36].

Limitations included the absence of an initial theory due to insufficient knowledge about the subject at the study's outset. All seven cases examined were general practices with PMHNPs, potentially skewing perspectives toward this new development. While this one-sided perspective was necessary for this type of research, it may limit generalizability. Furthermore, no general practices from the four largest cities in the Netherlands were included, and scheduling difficulties prevented the presence of all participants during group discussions. Additionally, cross-case analysis work sessions did not involve all intended professionals. Bias mitigation efforts included individual online meetings with GPs, patients, an additional PMHNP, and two GP-MHPs. Despite these limitations, the findings are largely confirmed in previous studies on NPs in primary healthcare at the onset of their profession [28, 31, 32].

Practical implications

This study pictures the contextual factors that trigger mechanisms resulted in positive outcomes as accessibility, quality of mental health care and job satisfaction of practitioners in general practices. This knowledge is valuable for general practices that consider employing a PMHNP and PMHNPs who consider working in the general practice. During acquaintance and in further collaboration, it can help professionals to create a context in which mechanisms are triggered that result in positive outcomes. However, for upscaling the implementation of the PMHNP in general practice, it is necessary that adequate financial structures are developed for the appropriate positioning of the profession. This requires an active role from health insurance companies and policy makers, as the individual GP cannot solely achieve this change. A study by Dankers-de Mari [37] describes steps important for policy makers and states that after improving familiarity, the next step for policy m8kers is to motivate practices by lowering their perceived barriers, for instance, by creating reimbursement opportunities.

Conclusion

This study emphasises that a transition in general practices is necessary in order to offer lowtreshold sustainable mental healthcare in primary care. Professionals and patients working with a PMHNP in general practices believe that the PMHNP contributes to accessibility and

quality of mental healthcare and job satisfaction of professionals in the general practice. The three mechanisms underlying the effects of the PMHNP are motivation and investment, familiarity and trust, equivalence and autonomy. Deployment of the PMHNP in general practices means pioneering. It takes time and effort of participants to invest in finding the optimal position for the PMHNP within the practice among the colleagues. Overall, this research shows the importance of creating an environment in which collaborative efforts and adaptable structures lead to the optimisation of integrating PMHNPs into general practice settings in order to improve patient outcomes.

Abbreviations

CMO	Context mechanism and outcome
GP	General practitioner
GP-MHP	General practice mental health professional
PMHNP	Context mechanism and outcome

Supplementary Information

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Supplementary Material 1: **Additional file 1:.pdf**: Title: Observation Protocol Case study: Observation Protocol for the purpose of observing the PMHNP.

Supplementary Material 2: **Additional file 2:.pdf**: Title: Interview guides casestudy: Description: Interview guides for the purpose of interviews with PMHNP, general practitioner, manager, healthcare professional and patient and relatives.

Supplementary Material 3: **Additional file 3:.pdf**: Title: Code book: Description: Code book with main themes and subthemes

Supplementary Material 4

Supplementary Material 5

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Author contributions

Ans Tordoir, Veerle van Laarhoven, Noortje van Duijnhoven, Peter Coolen, Maud van Vlerken, Carla Jutte, Miranda Laurant and Anneke van Vught have contributed to the acquisition and interpretation of data, substantively drafted the work and revised it and also contributed to the design of the work. Ans Tordoir, Veerle van Laarhoven, Noortje van Duijnhoven, Peter Coolen, Maud van Vlerken, Carla Jutte, Miranda Laurant and Anneke van Vught have substantively contributed to the analysis of the data, and Veerle van Laarhoven, Ans Tordoir and Anneke van Vught have prepared all the tables and figures. Veerle van Laarhoven and Ans Tordoir have worked together on the manuscript and contributed equally as first authors (shared first-authorship). Enzio Boeijen contributed to the writing and reviewing of the article. Miranda Laurant and Anneke van Vught have supervised Veerle van Laarhoven, Ans Tordoir in the data search, analysing the data and writing the manuscript. All authors reviewed the manuscript and have approved the submitted version (and any substantially modified version that involves the author's contribution to the study). All authors have agreed both to be personally accountable for the author's own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature.

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Data availability

The anonymised datasets in Dutch generated and/or analysed during the current study are not publicly available, but can be requested from the corresponding author.

Declarations

Ethics approval and consent to participation

All participants received both verbal and written information about participation in the study. Each participant gave a written informed consent and agreed to audio-tape the interviews. The data and the consent forms are stored on the secure server of the HAN University of Applied Sciences. Only the researchers have access to these data. This study was conducted in accordance with the Declaration of Helsinki. The study protocol and data management plan were approved with a Letter of Approval by the HAN Research Ethics Committee (ECO) (ECO 335.03/22).

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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