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Measures taken in primary healthcare to reduce inappropriate opioid use and the opioid prescribing behavior of general practitioners: a baseline measurement

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Content

Summary in Dutch

Het gebruik van opioïden in Nederland is in de afgelopen twintig jaar toegenomen. Ongepast gebruik van opioïden kan verschillende gevolgen hebben, zoals afhankelijkheid, verslaving en misbruik. Om het ongepaste gebruik van opioïden tegen te gaan, heeft het team van de *Tool for Reducing Inappropriate Opioid use for Physicians, Pharmacists and Patients* (TRIO-3P) een tool ontwikkeld.
Het doel van dit onderzoeksproject was om te onderzoeken welke maatregelen huisartsen en apothekers die deelnamen aan de TRIO-3P studie ondernamen om ongepast opioïdengebruik te verminderen in de baseline situatie, wat de voorschrijfgegevens waren van de deelnemende huisartsen en of er een verband was tussen de genomen maatregelen door de huisartsen en de voorschrijfgegevens van deze huisartsen.
Er werden vragenlijsten ontwikkeld via Castor EDC voor zowel huisartsen als apothekers. Deze werden geanalyseerd met beschrijvende analyse via SPSS. Voorschrijfgegevens werden uit Stichting Farmaceutische Kengetallen (SFK) geëxtraheerd en geanalyseerd via Excel. Het verband tussen de genomen maatregelen door huisartsen en de voorschrijfgegevens van deze huisartsen werd onderzocht door onafhankelijke T-toetsen uit te voeren via SPSS.

37 huisartsen en 22 apothekers werden geïncludeerd. Uit de vragenlijsten kwam naar voren dat weinig huisartsen en apothekers maatregelen namen om ongepast opioïdengebruik te verminderen voorafgaand aan TRIO-3P studiedeelname. Er was een grote variatie te zien in voorschrijfgegevens tussen de huisartsen. Er was geen significant verband gevonden tussen de genomen maatregelen door huisartsen en de voorschrijfgegevens van deze huisartsen.

Huisartsen en apothekers ondernamen weinig actie om ongepast opioïdengebruik tegen te gaan. TRIO-3P kan handvatten bieden aan huisartsen en apothekers om ongepast opioïdengebruik tegen te gaan.

Abstract

Objective: In the past two decades, opioid use has increased in the Netherlands. Inappropriate use of opioids can lead to dependency, addiction, and abuse. To reduce inappropriate opioid use, the Tool for Reducing Inappropriate Opioid use for Physicians, Pharmacists, and Patients (TRIO-3P) developed a tool.

The aim of this research project was to examine the baseline situation of the measures taken by general practitioners and pharmacists prior to TRIO-3P-study participation to reduce inappropriate opioid use, the baseline situation of the prescribing behavior of general practitioners and whether there is a correlation between the taken measures and the prescribing behavior.

Methods: We developed questionnaires in Castor EDC for general practitioners and pharmacists about the measures taken prior to study participation to reduce inappropriate opioid use and analyzed these questionnaires using SPSS. Prescription data of the included general practitioners were extracted, analyzed, and compared to the mean number of users of strong-acting opioids and the mean number of patients with long term opioid treatment by using independent samples T-tests through SPSS.

Results: 37 general practitioners and 22 pharmacists were included. The questionnaires showed that a small proportion of the general practitioners and pharmacists took measures prior to study participation to reduce inappropriate opioid use. Prescription data vary widely between general practitioners. Oxycodone was the most prescribed strong-acting opioid. No significant correlations were seen between the measures taken prior to study participation and the prescription data.

Conclusion: Few GPs and pharmacists took measures to reduce inappropriate opioid use prior to TRIO-3P-study participation. TRIO-3P intervention components may give handholds to general practitioners and pharmacists to reduce inappropriate opioid use.

Introduction

In the United States (US), the number of deaths due to opioid overdoses increased almost five times between 1999 and 2016 [1]. The increased number of opioid prescriptions in the Netherlands between 2013 and 2017 (24%), for a smaller extent than in the US, showed that the issue of the US was an internationally emerging problem. Not only the number of prescriptions increased in this period, but also the number of hospital admissions and cases of mortality due to opioid overdoses increased [2]. However, this increase is not attributable to an increase in pain prevalence and severity [3].

Opioid use in the Netherlands

After 2017, a decrease in number of opioid prescriptions was seen. After two years, in 2019, 585 thousand patients received a prescription for strong-acting opioids [4]. A decrease was observed again in 2020, in which 560 thousand patients received a prescription for strong-acting opioids [5]. However, in 2021 the number of patients receiving a prescription for strong-acting opioids increased [6].

Between 2007 and 2017, the increase in use of oxycodone was greater than the increase in use of other opioids, such as fentanyl and morphine. Oxycodone was also the most frequently prescribed strong-acting opioid. Among the two well-known weak-acting opioids, tramadol and codeine, tramadol was most frequently prescribed [7].
Strong-acting opioids are less often prescribed than weak-acting opioids. However, there was a greater increase in prescriptions of strong-acting opioids than in prescriptions of weak-acting opioids between 2005 and 2018 [8].

In 2017, 80% of the opioids were prescribed by general practitioners (GPs) [9]. In a Dutch study, the primary indications of prescribed weak- and strong-acting opioids in primary care over the years 2010 to 2015 were researched. Both weak- and strong-acting opioids were most frequently prescribed for musculoskeletal pain. Pain of the nervous system and pain due to cancer were the second indications for which respectively weak-acting and strong-acting opioids were most frequently prescribed [8].

In 2018, 16.8% of all the patients that received an opioid prescription were patients that received long term opioid treatment (LTOT). Patients with LTOT receive opioid treatment for a period longer than 90 days [10]. LTOT can lead to dependence, abuse and addiction to opioids. Also, patients with LTOT are more likely to overdose, have a higher risk of fractures and traffic accidents and have an increased risk of having a

myocardial infarction [11]. Also, LTOT can cause opioid induced hyperalgesia in patients with non-cancer related pain (NCP). This mainly occurs in patients who abuse opioids. These patients may also experience analgesic tolerance [12,13]. For these reasons, it is crucial to prevent inappropriate use of opioids for NCP.

GPs and pharmacists could contribute to reducing initiation of opioid prescriptions and opioid tapering. For instance, the study by Goodman et al. showed that discussing the reasons for tapering opioids with patients individually and guiding the patients through the tapering led to a significant decrease of the morphine equivalent daily dose (MEDD) among these patients compared to patients that did not receive counseling from their GPs [14].

The study of Elsemiek Jansen et al. consulted a multidisciplinary expert panel, that mainly consisted of primary care givers, for the construction of the Tool for Reducing Inappropriate Opioid use for Physicians, Pharmacists and Patients. This study highlights that community pharmacists could have an important role in reducing opioid prescriptions and that GPs and pharmacists could share responsibilities in this matter [15].

The contribution of GPs and pharmacists can lead to reduced initiation of opioids and to successful tapering of LTOT. However, factors as patients' motivation, characteristics and personal circumstances could influence the process as well [16]. The systematic review of De Kleijn et al. demonstrated that multidisciplinary group-based therapeutic sessions could also lead to successful tapering of LTOT [17].

The Dutch General Practitioners Association (NHG) published guidelines on the treatment of pain [18]. These guidelines provide recommendations for prescribing weak-acting and strong-acting opioids. However, it is challenging to implement these recommendations in practice. Therefore, the tool for Reducing Inappropriate Opioid use for Physicians, Pharmacists and Patients (TRIO-3P) study developed an opioid reduction tool that aims to provide handholds for healthcare providers to carry out the NHG guidelines into practice and to guide patients in tapering opioids.
This tool will be deployed in about 40 general practices and the pharmacies associated to these practices in the Netherlands. GPs, practice nurses, pharmacists and pharmacy technicians can contribute to the reduction of opioid prescriptions and to the guidance of tapering LTOT in primary care by applying this tool in their practices and pharmacies.

This research project aims to investigate the baseline situation of the measures taken by GPs and pharmacists prior to TRIO-3P study participation, the baseline prescribing behavior of GPs, and the correlation between the prescribing behavior of GPs and restriction measures implemented prior to study participation.

Methods

Study design and context

This study involved a mixed-methods study among healthcare providers participating in the TRIO-3P study and identified the baseline situation of GPs' prescribing behavior and community pharmacists' dispensing behavior and the measures taken to reduce initiation and duration of opioid treatment and to reduce the number of long-term opioid users between September 2022 and December 2022. Prescription data were extracted, and questionnaires were developed for both GPs and community pharmacists to analyze the prescribing and dispensing behavior. The baseline situation of both the prescribing and the dispensing behavior and the baseline situation of measures taken prior to study participation were investigated to examine the implementation and feasibility of the TRIO-3P tool.

TRIO-3P intervention study

The TRIO-3P study studies the implementation and feasibility of the TRIO-3P tool. The TRIO-3P tool aims to reduce inappropriate use of opioids in primary healthcare. TRIO-3P is a tool that consists of two parts. Part A provides instruments, guidelines and advice for GPs and pharmacists to obtain a reduction both in number and duration of opioid prescriptions in first, second and follow-up restrictions. Part B focuses on long-term users and gives GPs and pharmacists support in selecting long-term users and guiding them with opioid tapering.

58 GPs and the associated pharmacies were included in the TRIO-3P study. At start, a pharmacotherapeutic consultation (FTO) was held with GPs and pharmacists. During this FTO, part A and part B were explained to the GPs and pharmacists by one of the researchers of the TRIO-3P study. The TRIO-3P tool consists of several components which are displayed in table 1. The first column shows the purpose of every component. The TRIO-3P study aims to obtain data on opioid prescribing and data from questionnaires from both healthcare providers and patients. During a study period of six months, GPs and pharmacists receive four questionnaires to evaluate to what extent the healthcare providers use the components of the TRIO-3P tool.

Table 1. Components in the TRIO-3P tool

Components part A		Attachment
1. Education for healthcare providers and patients	E-learning Leaflet: Opioids FTO	 3
2. Opioid decision tree	NHG guidelines Opioid decision tree	4 5
3. Risk assessment		
4. Selection, dosage and duration when initiating opioids		
5. Follow-up and ending opioid treatment		
6. Prevent inappropriate and long-term opioid use		
Components part B		
1. Education for healthcare providers and patients	E-learning Leaflet: Chronic pain FTO	 6
2. Identification of LTOT patients with NCP	Manual data extraction SFK	7
3. Risk assessment opioid tapering	Excel registration form for patient selection	8
4. Motivation and information for patients considering opioid tapering	Invitation letter for patients Guide: motivational conversation patient Guidelines on opioid tapering (Handreiking Afbouw Opioïden)	9 10 11
5. Initiation of opioid tapering and guidance		

Part 1: Questionnaire

The questionnaires were developed and constructed by the research group of TRIO-3P. The research group of TRIO-3P is represented by different disciplines. A separate questionnaire was developed for both GPs and pharmacists. However, the questionnaires covered the same four topics. The first topic covered the properties of the general practice of pharmacy, the number of patients registered in the general practice or pharmacy, patient characteristics such as mean age and socio-economic status and at what level the GPs and associated pharmacists collaborate.

Information on employees, e.g. how many GPs and practice nurses per general practice and how many pharmacists and pharmacy technicians per pharmacy, age and experience with opioid tapering, was queried in the second section of the questionnaire. The third section was about previous efforts to reduce LTOT, such as an FTO on opioids organized prior to study participation, education for employees, agreements

between GPs and pharmacists, transmural agreements and agreements between GPs or pharmacists. The last part consisted of the question whether the GP or pharmacist has had an FTO or separate consultation on TRIO-3P.

The questionnaires were developed and sent via Castor EDC and consisted mainly of closed questions. However, if the participant had an answer different from the given options, the participant had the possibility to answer the question as an open-ended question. The questionnaires for GPs and pharmacists consisted of respectively 26 and 23 questions. Depending on whether certain aspects were applicable of not, there may be a few more of less questions. The questionnaires are included in attachments 1 and 2. Before the questionnaires were sent out, they had been tested internally by three people.

Data collection

The questionnaires were sent to GPs and pharmacists of all general practices and pharmacies who participated in the TRIO-3P study. The questionnaires had to be completed by one GP per general practice and by one pharmacist per pharmacy. The questionnaires were sent through Castor EDC. The healthcare providers received the questionnaires via e-mail.

The questionnaires were sent on t=0, which is at most one day after the GPs and pharmacists attended the FTO that was organized by TRIO-3P at their practice or pharmacy.

One week after the questionnaire has been sent out, the GPs and pharmacists received a reminder through e-mail. If the questionnaire was not completed within two weeks, GPs and pharmacists were reminded to complete the questionnaire through a phone call.

Data analysis

The questionnaires were exported from Castor EDC and imported in SPSS 28.0.1.0. The completed questionnaires were checked for completeness, consistency and extraneous values. Descriptive analysis through SPSS was used for analysis of the questionnaires.

Part 2: Prescription data

Data collection

Prior to the FTO, pharmacists were asked to extract prescription data of the general practices associated to their pharmacy from the Foundation for Pharmaceutical Statistics (Stichting Farmaceutische Kengetallen, SFK). Pharmacists received a

manual on how to extract these data from the SFK-web-interface containing pre-defined queries on pharmacy dispensing data.

Data extracted were the number of prescriptions for stron-gacting opioids per GP per general practice, the number of prescriptions in the last three months for the following strong-acting opioids: oxycodone, fentanyl, morphine, buprenorphine and tapentadol and the number of patients receiving strong-acting opioids for a period longer than three months.

Data analysis

The prescription data were adjusted for practice size and shown per 1.000 patients. The prescription data were put out in Excel and analyzed descriptively through SPSS 28.0.1.0.

Part 3: correlation between taken measures and prescription behavior

The questionnaire of the GPs and their prescription data were used to examine whether the measures taken by the GPs and the number of patients using strong-acting opioids and the number of patients with LTOT had a correlation. The test variables mean number of patients using strong-acting opioids and mean number of patients with LTOT were determined and were compared to the mean number of GPs that did or did not take the measure using independent samples T-tests through SPSS 28.0.1.0. The number of patients were adjusted for practice size and per 1.000 patients.

Ethics and confidentiality

This project was exempted from formal medical ethical approval by the Medical Ethical Committee of the University Medical Centre Utrecht. The research protocol was approved by the Institutional Review Board of UPPER, Division of Pharmacoepidemiology and Clinical Pharmacology, Utrecht University.

Data were anonymized by using coding of general practices and pharmacies. The coding key was stored encrypted and separated from questionnaire and prescription data.

Results

Part 1: questionnaires

General practitioners

The questionnaire was sent to 37 general practices. Each general practice had one GP as the contact person for the study. 86.5% of the GPs (n=32) completed the questionnaire. With regard to the start of the TRIO-3P study, 15.6% of the GPs had a separate consultation with the pharmacist and 84.4% had an FTO on the TRIO-3P study. The majority of the GPs were located in urban and urbanized rural areas (53.1% and 37.5% respectively), while only one practice was located in a rural area.
40.6% of the GPs were located in healthcare centres, 37.5% were located with several GPs in one building (HOED) and two general practices (6.3%) were solo.
The number of patients per general practice ranges from 2.200 to 10.000. Approximately 40% of the practices had 4.000 or less patients, another 40% comprised a patient population between 4.000 and 7.000 patients and six general practices (20%) had 7.000 or more patients.

The average age of the patient populations varied greatly between general practices. The average age of the patient populations varied from 33 years (3.1% of the general practices) to 60 years (9.4% of the general practices). The majority of the general practices (25.0%) had a patient population with an average age of 55 years and 19.0% had a patient population with an average age of 45 years.
The socioeconomic status of the patients was rated high by 25.0%, average by 65.6% and low by 9.4% of the GPs.

The general practices had between one (6.3%) and nine (3.1%) GPs. Most general practices (25%) had four GPs, 21.9% had five GPs, 15.6% had three GPs and 18.8% had only two GPs in the practice.

According to GPs, the general practices and pharmacies collaborate on an FTO level 3 or 4 (50% and 50% respectively). This entails frequent meetings between GPs and pharmacists in which concrete agreements are established (level 3) and in addition that the agreements are evaluated (level 4).

Prior to participation in the TRIO-3P study, several GPs had taken measures regarding opioid use of patients. The questioned measures and the number of GPs that took the measures are shown in table 2.

Table 2: measures taken by GPs prior to participation in the TRIO-3P study (n=32)

Measures (questioned by TRIO-3P)	N (%) of GPs that took the measure
Education	3 (9.4%)
Agreements with pharmacists On: • First prescription • Provision of information to patient • Duration of first, second or following opioid prescriptions • Opioid tapering Other	6 (18.8%) 3 (9.4%) 1 (3.1%) 4 (12.5%) 1 (3.1%) 1 (3.1%)
Transmural agreements On: • Duration of opioid prescriptions • Repeating opioid prescription after hospital discharge	1 (3.1%) 1 (3.1%) 1 (3.1%)
Agreements within the general practice On: • Initiating an opioid • Provision of information to patient • Repeating opioid prescriptions • Opioid tapering • Duration of first, second or following prescription	12 (37.5%) 8 (25.0%) 2 (6.3%) 7 (21.9%) 2 (6.3%) 7 (21.9%)
Other	1 (3.1%)[#]

[#] The agreements that GPs described were as follows. Patients with LTOT receive opioids for only one month. Patients can not receive opioids through automatic refill program services. When an opioid is initiated, it is a one-time prescription for a short period of time. Several GPs receive notifications when opioids are prescribed differently.

Pharmacists

The baseline questionnaire was sent to 22 pharmacists and was completed by all of them. 81.8% of the pharmacists had an FTO on the TRIO-3P study and the remaining four pharmacists had a separate consultation with the GPs.

Similar to the general practices, the majority of the pharmacies (68.2% and 27.3% respectively) were located in urban areas or urbanised rural areas and one pharmacy is located in a rural area. 50% of the pharmacies are part of a healthcare centre, 18.2% are part of pharmacists and general practices in one building (AHOED) and 27.3% were solo pharmacies.

The majority of the pharmacies have one (54.5%) or two (27.3%) pharmacists working in the pharmacy, 13.6% have a total of three pharmacists and one has four pharmacists. The number of pharmacy technicians per pharmacy ranges from two (9.1%) to 30 (4.5%). Most pharmacies (31.8%) work with 5 to 7 pharmacy technicians.

According to the pharmacists, the collaboration with GPs is on an FTO level 2 (4.5%), level 3 (18.2%) and level 4 (77.3%). An FTO level 2 entails consultations between pharmacists and GPs with no concrete agreements made.

Prior to the participation in the TRIO-3P study, pharmacists had taken measures on reducing opioid use. The questioned measures by TRIO-3P and the number of pharmacists that have taken the measures are shown in table 3.

Table 3: measures taken by pharmacists prior to participation in the TRIO-3P study (n=22)

Measure (questioned by TRIO-3P)	**N (%) pharmacists that took the measure**
Education	4 (18.2%)
Agreements with general practices On: • First prescription • Provision of information to patient • Duration of first, second or following opioid prescriptions • Repeating opioid prescriptions • Opioid tapering • Discontinuation of opioids • Tapering schedules	7 (31.8%) • 6 (27.3%) • 3 (13.6%) • 5 (22.7%) • 6 (27.3%) • 3 (13.6%) • 2 (9.1%) • 1 (4.5%)
Transmural agreements On: • Duration of opioid prescriptions • Repeating opioid prescriptions after hospital discharge • Other	3 (13.6%) • 3 (13.6%) • 3 (13.6%) • 1 (4.5%)
Agreements within the pharmacy[#]	6 (27.3%)
Other	1 (4.5%)
None of the above	4 (18.2%)

[#] The agreements described by pharmacists were on subjects such as the duration of first prescriptions, the provision of information to the patient when initiating an opioid, tapering schedules, no automatic refill program services.

Part 2: Prescription data

At start of the TRIO-3P study, pharmacists extracted the prescribing data of their linked general practices from SFK. Figure 1 shows the users of strong-acting opioids per 1.000 patients per FTO-group. Table 4 shows the basic characteristics of the FTO-groups. The total number of users of strong-acting opioids and the number of patients with LTOT are shown in table 5 for each FTO-group.

Table 4. Basic characteristics of each FTO-group

FTO-group	Number of general practices	Number of pharmacies
H2+3+4	3	1
H6+7	2	2
H8+9	2	1
H10+11	2	1
H14-16+36	4	1
H24-28	5	2
H37	1	1
H40	1	2

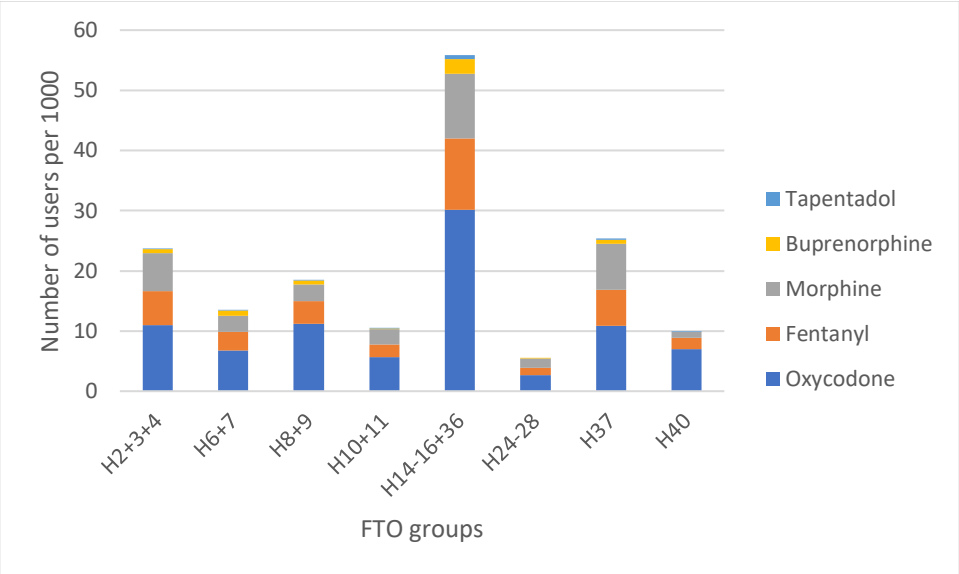

Figure 1. The number of users of each strong-acting opioid per 1000 patients per FTO-group

Table 5. The number of users of strong acting opioids and the number of chronic users of opioids (LTOT) per 1000 patients per FTO group.

FTO groups	**Number of users of strong-acting opioids (per 1000 patients)**	**Number of chronic users of opioids (LTOT) (per 1000 patients)**
H2+3+4	18.6	6.4
H6+7	6.8	3.4
H8+9	11.2	5.1
H10+11	5.7	5.7
H14-16+36	30.1	31.4
H24-28	2.7	2.8
H37	10.9	12.4
H40	7.0	6.2

Part 3: Correlation between the taken measures and the current prescription behavior

The mean number of users of strong-acting opioids and the mean number of patients with LTOT were compared to the mean number of GPs that had taken the measures. The results of the independent samples T-tests are shown in table 6.

Table 6. Results of the independent samples T-test (n=17)

Measures	Taken: no/yes	Number of general practices (with known prescription data)	Mean number of patients using strong-acting opioids*	p-value	Mean number of chronic opioid users*	p-value
Education	No	14	17.7	0.48	5.3	0.18
	Yes	3	24.7		7.3	
Agreements GP with pharmacists	No	13	16.9	0.07	5.2	0.79
	Yes	4	25.3		7.1	
Transmural agreements	No	16	18.6	-	5.5	-
	Yes	1	23.7		7.0	
Agreements within the general practice	No	10	18.5	0.18	5.4	0.57
	Yes	7	19.5		5.9	

* adjusted for general practice size and per 1.000 patients

Discussion

TRIO-3P included 58 GPs and their linked pharmacies. Due to the study period of this research project, GPs and pharmacists that were included for TRIO-3P between September and December 2022, were included in this study.

The questionnaires were completed by all the pharmacists and by 32 of the 37 GPs. The questionnaires showed that there was a wide variation between the FTO-groups, such as the number of patients that were enrolled in the general practices, but also the average age of the patient population per general practice.

Furthermore, there was a difference in the answers given to the question on the level of collaboration. Pharmacists were more likely to answer that they collaborated on an FTO level 4, while half of the GPs say they collaborated on an FTO level 3. This difference may be caused by a difference in interpretation of the cooperation by GPs and pharmacists. A less likely explanation is that the five GPs that did not complete the questionnaire were the GPs with whom pharmacists say to collaborate on an FTO level 4.

GPs and pharmacists did not take many measures prior to TRIO-3P study participation to reduce inappropriate opioid use. GPs and pharmacists hardly organized education on opioids within their general practice or pharmacy. An even smaller proportion did not make transmural agreements. A greater part of the GPs and pharmacists did make agreements with each other or within the general practice or pharmacy. These agreements were mainly on first prescriptions, initiating an opioid, the duration of first, second or following prescriptions and repeating an opioid prescription.

Many GPs seem to find guidelines on opioids too general, which makes it difficult to implement the guidelines in the daily practice. A suggestion by Punwasi et al. is to emphasize the role of GPs in the guidelines to facilitate the implementation of the guidelines in the daily practice [19]. TRIO-3P facilitates the implementation of the guidelines by providing handholds to GPs, such as an invitation letter for patients, a guide for motivational conversation and a manual on tapering of opioids. Moreover, TRIO-3P provides leaflets that educate patients on opioid use and chronic pain.
TRIO-3P encourages GPs and pharmacists to make agreements within their general practice and pharmacy. Making agreements within the general practice could reduce inappropriate opioid use, as GPs could influence each other’s prescribing behavior [19].

Patients receiving an opioid treatment after surgery often continue to use the opioid for a very long time [20]. Also, GPs say that they do not receive enough support from specialists. This implies that transmural communication should be improved [19]. Participation to TRIO-3P stimulates GPs and pharmacists to make transmural agreements to prevent the continuation of opioids after surgery.
To reduce inappropriate opioid use, TRIO-3P suggests that GPs and pharmacists make agreements with each other. Indeed, one of the difficulties that pharmacists experience in reducing inappropriate opioid use, is poor communication with GPs [21].

The prescription data varied widely between general practitioners. In these prescription data, the opioid prescriptions for patients with cancer related pain were also included. However, most of these opioid prescriptions are likely related to non-cancer pain treatment [8]. As expected, oxycodone was the most prescribed strong-acting opioids among the included general practices. This was followed by fentanyl and morphine. Few GPs prescribe buprenorphine and tapentadol.
Kalkman et al. showed that oxycodone was the most prescribed opioid in the Netherlands between 2008 and 2017. In this research project this is reflected. Fentayl is the second most prescribed strong-acting opioid and morphine follows third in the Netherlands. The difference between the number of users of fentanyl and the number of users of morphine is very small and increases slightly with time. In this research project there is hardly a difference in number of users of both strong-acting opioids in the included general practices. This may have differed if the prescription data of all the included GPs were available and if the sample size was larger.

The number of users of strong-acting opioids and the number of patients with LTOT showed odd values as the number of patients with LTOT was higher than the number of patients using strong-acting opioids for FTO-groups H14-16+36 and H37. A possible explanation for this is that for the extraction of prescription data on users of strong-acting opioid a different date was selected than for the extraction of prescription data on the number of patients with LTOT.

The independent samples T-tests showed no significant correlation between the number of GPs taken several measures and the mean number of patients using strong-acting opioids and the mean number of patients with LTOT. The sample size of this research project was small and not all the GPs completed the questionnaires. Moreover, for some of the GPs the prescription data were lacking.

Furthermore, GPs that did tend to take a certain measure seemed to have more patients using strong-acting opioids or more patients with LTOT. A possible explanation for this, is that these GPs were aware of the high numbers of users of strong-acting opioids and patients with LTOT and took these measures to reduce inappropriate opioid use.

TRIO-3P will extract the data appropriately through SFK so that all the prescription data will be available. Also, TRIO-3P is still including GPs and pharmacists. This will lead to a greater sample size and possibly could clarify the correlation between measures taken and prescription data.
Also, TRIO-3P will sent questionnaires to the participants after every two months to evaluate their use of the several components of TRIO-3P. The results of these questionnaires will show to what extent the tool is feasible and implementable.

Conclusion

This research project shows the baseline situation of the prescription data of the FTO-groups and the measures taken by GPs and pharmacists prior to TRIO-3P study participation. There was a substantial difference in the number and type of opioid prescriptions between the FTO-groups. Few GPs and pharmacists took measures to reduce inappropriate opioid use prior to TRIO-3P-study participation. TRIO-3P intervention components may give handholds to GPs and pharmacists to take more measures and reduce inappropriate opioid use.

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