

# A qualitative study of factors influencing family physicians' prescription of the Written Asthma Action Plan in primary care in Singapore

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## ABSTRACT

**Introduction:** The Written Asthma Action Plan (WAAP) educates patients on the early recognition and treatment of deteriorating asthma. It has been adopted in Singapore polyclinics and restructured hospitals in the past few years as recommended by the Singapore National Asthma Programme. Local asthma patients can choose to be treated by family physicians at public polyclinics or by private general practitioners (GPs). In a previous study, half of the physicians in primary care self-reported that they formulated an asthma action plan for their patients, but little is known about their actual practices. This qualitative study explored family physicians' views of WAAP and its implementation in primary care in Singapore.

**Methods:** Qualitative data was obtained for 29 participants from polyclinics, GP clinics or locum doctors at five separate focus group discussions. The data was coded using NVivo-7 software, audited and analysed to identify emergent themes.

**Results:** The participants generally perceived the usefulness of WAAP. While WAAP was widely used in polyclinics, GPs rarely used it. Even in polyclinics, usage varied and was associated with participants' training and practice of WAAP and task substitution to nurses. They perceived that WAAP would benefit only selected motivated patients who could understand and use it. They were hampered by language barriers in educating their multiracial patients and the perceived lack of time related to patient loads in polyclinics. The GPs lacked training and practice, role models and relied on verbal instructions as a personalised form of care delivery.

**Conclusion:** Family physicians generally perceived WAAP as useful, but implementation was hampered by lack of training and practice, language barriers and perceived benefits for patients.

**Keywords:** asthma, family physician training, Written Asthma Action Plan

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## INTRODUCTION

Global Initiative for Asthma (GINA) and the Singapore Ministry of Health Asthma Clinical Practice Guidelines (MOH CPG) have recommended the introduction of the Written Asthma Action Plan (WAAP) to patients.<sup>(1,2)</sup> WAAP educates patients on the early recognition and treatment of deteriorating asthma.<sup>(3)</sup> Evidence has shown that patients with WAAP experienced decreased hospitalisations, emergency room visits, unscheduled visits to doctors for asthma, missed days of work and nocturnal awakenings.<sup>(4)</sup> The walk-in primary healthcare system in Singapore allows asthma patients to select their healthcare providers either in public polyclinics or private general practitioner (GP) clinics. WAAP has been adopted and used in the 18 polyclinics and all restructured hospitals in Singapore in the last four years as recommended by the Singapore National Asthma Programme.<sup>(5)</sup> In-house training had been conducted to educate polyclinic physicians and nurses in the prescription of WAAP. Polyclinics are accredited sites for family medicine training and induction courses are regularly organised for junior doctors posted to these centres.

The other major local primary healthcare providers are private GPs. The GPs need to attend a minimum number of continuing medical education (CME) programmes as part of their ongoing professional development in order to obtain their practice certificates from the Singapore Medical Council. GPs can choose to attend such CME programmes organised by the College of Family Physicians or by various specialist departments in tertiary hospitals. A previous survey of primary care physicians showed that

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half of them self-reported providing an asthma action plan to their patients, but it did not distinguish between a verbal and written format for the plans.<sup>(6)</sup> Little is known of the issues to do with WAAP prescription in actual clinical practices. This qualitative study explored family physicians' views pertaining to the use of WAAP in primary care in Singapore.

## METHODS

The investigators were polyclinic staff who regularly interacted with both family physicians and asthmatic patients. This article was the result of the subanalysis of a main study, which determined asthma management in primary care by family physicians. Due to a paucity of similar studies, the investigators conceptualised the study based on grounded theory. They used a qualitative research method, which allowed for in-depth exploration of the issues pertaining to family physicians' management of their asthma patients in primary care, including the use of WAAP.<sup>(7)</sup> The investigators developed a semi-structured topic guide after mutual deliberations. The institution's review board approved the study. Family physicians from both public and private primary care clinics were included in the purposive sampling, as the investigators perceived differences in the respective mode of care delivery. The latter also considered the enrolment of participants from different backgrounds of postgraduate training in family medicine, so as to capture a wider spectrum of views.

The first author facilitated the five focus group discussions (FGDs).<sup>(8)</sup> The other investigators assisted in collecting participants' consent and personal particulars and assumed the role of note-takers during the FGDs. The participants were informed of the objective of the study at the onset of the FGD and their identities were kept confidential. They were reimbursed for travel expenses. Each FGD was audiotaped, and lasted 45–90 minutes. Notes from each FGD were used as reference during subsequent transcription by an independent transcriber. The study was terminated after a saturation of ideas was achieved at the end of five FGDs. The taped interviews were transcribed into written texts, which were then audited independently by the investigators to ensure consistency. The first author analysed the qualitative data after all transcripts were read several times and coded with the aid of NVivo version 7 software. Potential conceptual and content-related themes were formulated in the thematic analysis. The quotes included in the results were typical views expressed by the participants and were used to exemplify emergent themes. Preliminary results were also sent to several participants to improve on the reliability of the report.

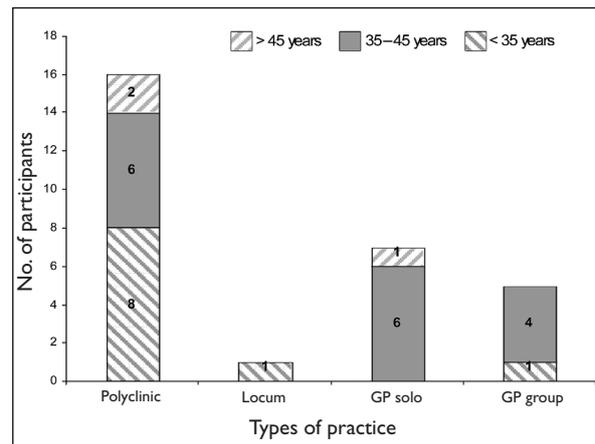


Fig. 1 Bar chart shows the age and practice profiles of participants.

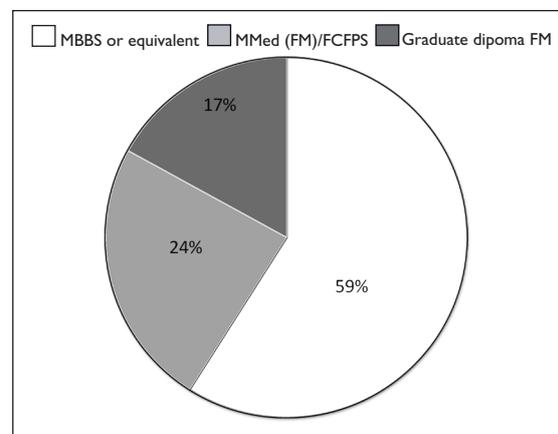


Fig. 2 Pie chart shows the highest qualifications attained by participating family physicians.

## RESULTS

29 family physicians, aged between 27 and 54 years and from all major racial origins in Singapore participated in five separate FGDs. They included family physicians working in polyclinics, GP clinics or as locum doctors. Their qualifications ranged from a basic medical degree to postgraduate diplomas or masters degrees in Family Medicine to Fellows of the College of Family Physicians of Singapore (Figs. 1 & 2). The investigators presented the results according to the following domains, which influenced the family physicians' prescription of WAAP: the family physician, the patient, WAAP and the local primary healthcare system. The single and interaction between multiple domains are illustrated in Fig. 3.

Only a few GP participants were aware of the existence of such a practice. None of the participants from GP clinics actively prescribed WAAP.

*"I don't know (about WAAP)... so far they've never showed it to me."* – GP.

Some participants reported being introduced to WAAP during an asthma modular course organised by the College

of Family Physicians or at CME talks in the restructured hospitals. However, they did not implement their knowledge of WAAP in their clinical practice.

*“Prof ABC gave out an English (WAAP) as well as a Malay one.”* – GP X. *“AAA Hospital action plan... I think it’s modified and simplified.”* – GP Y. *“If I can find that written action plan (from the lecture notes) ... but usually when I can’t find them, I just follow my own action plan. Acute (condition), chronic (condition), I tabulate for them.”* – GP X.

GPs would refer their difficult-to-control asthma patients to private respiratory physicians, but reported that the latter also did not prescribe WAAP.

*“I have one (asthma) patient who’s seeing a specialist. No written plan too.”* – GP.

In contrast, all polyclinic participants were aware of WAAP through their attachment in polyclinics. However, the content and mode of delivery of such training varied between polyclinics. Some participants perceived that the in-house training was inadequate.

*“We were trained in less than half an hour. [Laughs] It was a lecture. In less than half an hour they taught us how to do everything. They gave us a few scenarios for us to try, you know.”* – Polyclinic physician.

Despite being constantly exposed to WAAP in their clinical setting, some polyclinic participants expressed doubts over the effectiveness of certain measures in WAAP, such as the inhaled corticosteroid dose adjustment during asthma exacerbation. The uncertainty was associated with their failure to attend WAAP training sessions and lack of self-motivation for hands-on practices. Some missed the actual training for various reasons such as being on leave and learnt the execution of WAAP via their personal observations or other informal self-guided methods.

*“Seriously, for WAAP, I wasn’t trained. When I saw the WAAP that the nurses were writing down, I still queried the (inhaled) steroids that they were actually giving, doubling doses during an acute phase. I haven’t read that study, so I’m not really convinced.”* – Polyclinic physician.

Some participants perceived that there were too many tasks to take on during the consultation that distracted them from the WAAP prescription.

*“For asthma patients, I feel there’re too many things, you know there’s the asthma decision tool to fill up, there’s WAAP to fill up, there’s the symptom calendar. There’re just too many things for them. Even I find it difficult to grasp. So if anything that could come, a simple tool kit for them (would be useful). I’m not sure how it can happen...”* – Polyclinic physician.

A few participants perceived that other measures would be effective in controlling asthma, such as advice on trigger avoidance, instead of just focusing on WAAP.

*“I don’t use it for every single patient’s visit ...I*

*just wanted to say that sometimes you forget about the trigger factors; for example, teenage smoking, and when you address that, most of the time it will cut down the exacerbation.”* – Polyclinic physician A. *“I totally agree with the points raised by Dr A.”* – Polyclinic physician B.

Some participants cautioned that merely providing a copy of the WAAP to the patient without sufficient explanation would be ineffective.

*“The danger to give (WAAP) freely is that, the patient may not know what to do with it. Of course if the patient is motivated, good, but then if the patient is not, then the written asthma plan is not useful.”* – Polyclinic physician\* (\*denotes physician with postgraduate qualifications).

The participants generally perceived the usefulness of WAAP only for patients who could understand and use it; a patient’s failure to understand and use WAAP would render it a worthless exercise. However, some participants pointed out that certain patients prescribed with WAAP would not translate knowledge into action, leading to frustration for the physician. It might deter the latter from further prescription of WAAP or cause them to only prescribe WAAP to patients whom they perceived would understand and use WAAP.

*“I think it’s really good. If the patient follows it, it’s really good and some of them do. But I’ve had a few, who, no matter what, are still not following it. You show it to them, you remember this (WAAP)? Yes (reply from patient) but they just don’t do it (follow the plan).”* – Polyclinic physician.

Several participants of minority racial origins reported that language barriers hampered them from effectively educating their multiracial patients on the use of WAAP. Their solution was to seek the nurses’ assistance to counsel the patients in such situations.

*“I think it is useful, if language is a not barrier and time is not a constraint. I’ve used it a few times and it’s only useful to the educated, those who can understand. Those who cannot, then there’s no point. I speak, they (patients) also don’t understand!”* – Polyclinic physician A (Indian). Polyclinic physician B (Indian) interjected, *“That’s why we need the nurses. In our clinic, we have Indian-speaking, Malay-speaking and Chinese-speaking nurses ... so they all kind of help out.”*

The investigators noted the high tendency of polyclinic participants to prescribe WAAP and subsequently refer patients to the polyclinic nurses for WAAP counselling. Some would refer their patients directly to trained nurses for WAAP prescription. However, this was carried out on the assumption that nurses would know what to do with the WAAP, as little was communicated between the physician and nurses in the process.

*“What information is actually transcended down (to the patient)? What do we tell the nurse? Do we actually discuss with the nurse before the nurse sees the patient?”*

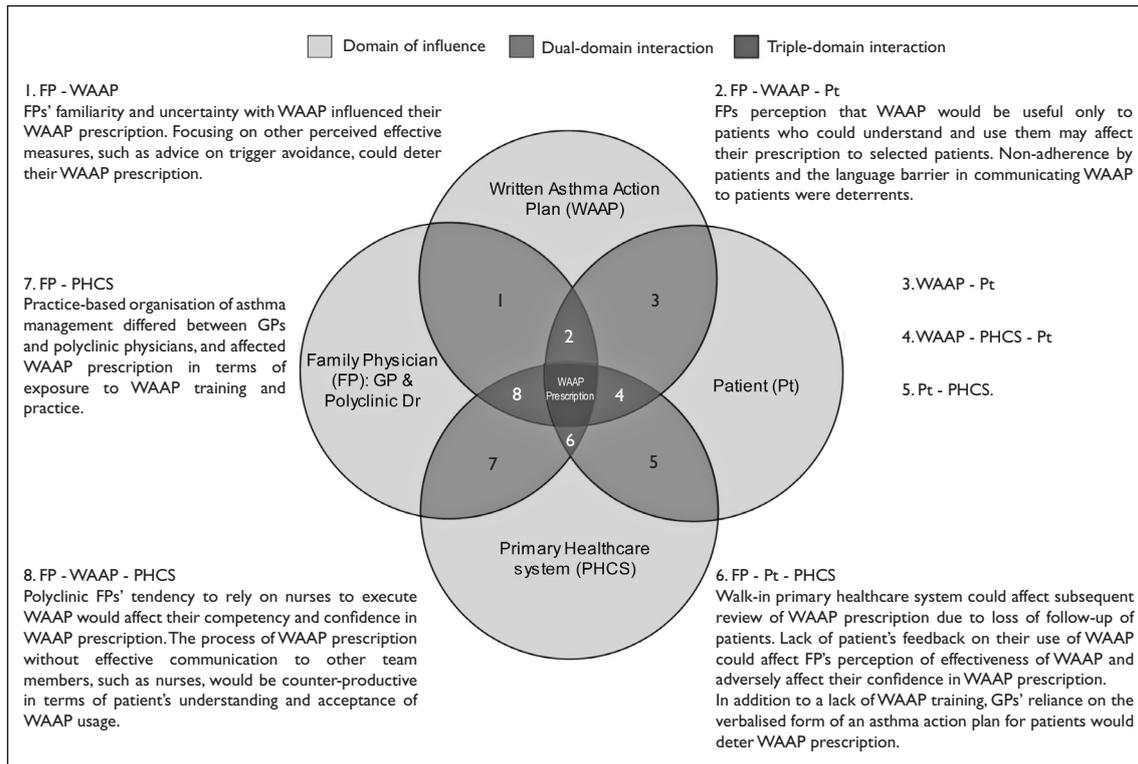


Fig. 3 Domains of factors affecting a family physician's WAAP prescription.

*Definitely no! All we do is fill up the action plan and give it to the nurse. The nurse will later explain to the patient. (I) don't know whether it's good enough or as good as it gets. I don't think that's good enough!*" – Polyclinic physician.

Some polyclinic participants voiced declining confidence if they fail to prescribe WAAP regularly. This could be the result of task substitution to the nurses.

*"I've not been prescribing it that much. Most of the patients I've seen are actually chronic cases. They have been prescribed (with WAAP), so we just reinforce it. I've not used it for a while. I've kind of lost confidence in doing it myself."* – Polyclinic physician.

Instead of a written form of the asthma action plan, the GPs still relied on verbal instructions to patients and were more ready to contact their patients to review their condition as a more personal form of care delivery.

*"I think they'll understand it (verbal asthma action plan) with time, you know, with regular usage. I think if it's an acute case, after the first round when you review them weekly, I'll use the phone to follow-up. I think the most important (measure) is follow-up. Teach them how to titrate the doses. But for acute (exacerbation), I don't. They probably need to see you one or two weeks later. That's how I do it for patients."* – GP.

Due to the walk-in primary healthcare system, polyclinic physicians tended to rely on patients' return visits to review their condition and to initiate or revise their WAAP accordingly.

*"...depending on how frequently they come back; if they come back on the second visit, then I'll make sure they*

*get some asthma action plan."* – Polyclinic physician.

However, patients could default on their review or they might not see the same polyclinic physician who had earlier prescribed their WAAP on their return visits. Review of WAAP might also be overlooked as a result of this missed opportunity. The lack of feedback from patients on their use of WAAP could undermine the family physicians' confidence and perception of the usefulness of WAAP.

## DISCUSSION

WAAP gained prominence after the first published Cochrane systematic review on written individualised management plans for asthma in adults and children in 2003.<sup>(4)</sup> Nonetheless, there remains a paucity of evidence regarding certain components of the WAAP, such as whether they were based on a traffic light system, the number of action points and the use of inhaled corticosteroid alone or oral corticosteroid alone.<sup>(9)</sup> Some participants in this study raised this query, and further research is required to determine the answers, which will support and enhance the confidence of family physicians to prescribe WAAP to their asthma patients. WAAP is included in the recommendations of major CPGs.<sup>(1)</sup> However the pace of adopting such evidence-based measures varies between countries. Wiener-Ogilvie et al reported that only 23% of patients had been given an asthma action plan in a recent survey of Scottish general practices.<sup>(10)</sup> Other studies have shown that between 2% and 42% of patients treated in primary care had WAAP.<sup>(11,12)</sup> No previous study has yet been conducted

in Singapore to determine the usage of WAAP in asthma management in both primary and secondary care.

This is a study that focused on WAAP based on the family physicians' perspective. The results are presented diagrammatically in terms of family physician, WAAP, patient and primary healthcare system domains (Fig. 3) to provide a convenient overview of the findings. Overlapping domains show the inter-relationship between these factors that could together affect the WAAP prescription. The results showed a marked difference in the usage of WAAP between the public and private primary care clinics. Higher usage in public polyclinics was the result of a proactive practice-based organisational system, including structured education of physicians and patients with asthma on WAAP. In a systematic review by Ring et al, the team reported that two of the highest quality papers conducted in primary care showed the effectiveness of interventions directed at the organisation of asthma care in promoting action plan use.<sup>(13)</sup>

Even in polyclinics, there should be concerted efforts to encourage the ownership and usage of WAAP among the polyclinic physicians, especially the junior doctors who are posted in every six months. The results highlighted an inclination for polyclinic physicians to engage the nurses to prescribe WAAP. This task substitution by other paramedical staff reflects a lack of personal commitment and ownership of WAAP among polyclinic physicians. While a multidisciplinary, multilingual team approach in implementing WAAP should be promoted in view of the high patient load in polyclinics, effective communication between members of the team should be actuated in the process of prescribing WAAP, so that uniform information is relayed to the patient. Clarity and consistency in this educational process is the first step in helping the patient to understand and subsequently use WAAP.

In view of the walk-in primary healthcare system, clinic processes should be reviewed to cater for follow-up of asthma patients with WAAP. WAAP should be reinforced on subsequent visits by the same team and should be revised periodically once the patient's asthma condition is stabilised. Patients' behavioural change in adopting WAAP will be facilitated if they experienced benefits from it as a result of these streamlined processes. Implementation of WAAP in GP clinics will be more challenging as GPs operate their clinics either alone or in small groups, and they need to devote protected time to training. Larger GP group practices could emulate the practice-based interventions in polyclinics.

GPs should be encouraged to transform their verbalised asthma action plan into a written format, which would serve as a reminder to patients to adjust their medications accordingly if they experience deteriorating asthma symptoms outside of GP clinic operating hours. The results

showed GPs' personalised approach towards educating the patients, such as reviewing the patient's condition by phone. Ring et al also reported that telephone reinforcement is another intervention that could increase action plan ownership, use and facilitation of use of WAAP.<sup>(13)</sup> Other interventions included in their systematic review were partially completed action plans and postal prompts inviting patients to general practice review and asthma management systems (including the 3+ plan with patient recall for review and internet-based physician monitoring). Family physicians should consider using these interventions to incorporate WAAP as an integral practice to optimise their patient's asthma control. This qualitative study did not correlate the input of the participants with their actual WAAP prescriptions for asthma patients. The results would not be generalisable to all family physicians in Singapore.

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