Factors affecting compliance for patients using Webster-paks

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Abstract

Objective: To investigate how well patients are able to use Webster-paks, based on their experiences using them, and to investigate factors that affect compliance in this group of patients.

Method: In-depth semi-structured interviews were conducted with a sample of five female participants, aged 48–90 years, who regularly received prescribed medications prepared in a Webster-pak by their community pharmacy. Interviews focused on practical issues associated with the use of Webster-paks, knowledge about medications, attitudes to general health and relationships with health care providers.

Results: All participants began using a Webster-pak following hospitalisation. They found the Webster-pak a beneficial and convenient service. Forgetfulness and confusion about numerous medications were cited as key reasons for suboptimal compliance before using Webster-paks.

Conclusion: Participants believed Webster-paks were a valuable service that helped to improve compliance.

Most participants interviewed expressed it was important to stay as healthy as possible, and they liked the security of knowing their medications were correctly prepared by their pharmacist.

Practice implications: Webster-paks can help to improve compliance, and should be more routinely considered as a primary way to assist patients to adhere to prescribed medication regimes.

Keywords: Webster-pak, dose administration aid, pill organiser, compliance.

Introduction
Compliance, also termed adherence, has been defined as 'the extent to which a person's behaviour (in terms of taking medications, following diets, or executing lifestyle changes) coincides with medical or health advice'. Extensive research has been conducted in the field of patient compliance with prescribed drug regimes. This research has identified that a large proportion of patients are non-compliant. Reported reasons include: a physical incapacity to open containers or read labels; confusion or lack of education about a complex regime; the relationship between patients and their primary health care provider; each individual's beliefs, experiences and fears about a particular disease state and its treatment; and acceptance or denial of the diagnosis. Dose administration aids, including Webster-paks, were introduced as a measure to overcome many of these factors, in an attempt to assist patients to be compliant. However, to date, little research has been conducted to find out how patients perceive their Webster-paks or how well they are able to use them. Webster-paks may aid compliance, but little is known about any practical difficulties associated with their use. Webster-paks are devices or packaging systems intended to facilitate the correct administration of solid dosage forms of medications – the right drug in the right dose at the right time for the right patient. All of the prescribed solid-dose medications to be taken at a given dose time are packaged together in separate compartments. Research suggests that Webster-paks potentially reduce medication errors and can act as a memory aid, reminding patients to take their medication and allowing a clear check that medications have been taken.

The primary aim of this research was to explore compliance issues for patients using Webster-paks. The research builds...
on existing knowledge of factors which can affect patient compliance, and explores which of these factors have been addressed by using Webster-paks, as well as identifying areas for future improvement. Specifically, this project discusses:

- How well patients are able to use Webster-paks;
- Difficulties faced by patients in using Webster-paks; and
- Factors both directly and indirectly related to the use of the Webster-pak that influence or affect patient compliance, including relationships with healthcare providers, current state of health, and attitudes towards maintaining good health.

Methods

Recruitment

Participants were recruited through their community pharmacies, using purposive sampling. Pharmacists were approached and asked to identify regular clients of the pharmacy, who lived at home, and who regularly self-administered prescribed medications from a Webster-pak prepared by that pharmacy. Pharmacists used their professional discretion to identify patients with no major cognitive impairment who, in their opinion, might be willing and able to participate in a study of this nature. The pharmacists were requested to exclude patients who they felt may become distressed or confused by an invitation to participate. In total, 75 letters of invitation were distributed via five pharmacies in regional Victoria.

Sample

A sample size of 8–12 participants was anticipated. Six potential participants responded, however one was excluded from the study as he did not leave a contact phone number and could not be traced. No further voluntary responses were received, which limited recruitment of a larger or more diverse sample population. This sample is not representative of the population at large, and did not include patients who may not understand how to use a Webster-pak, or the importance of regularly taking all prescribed medications.

Data collection

Data were collected during in-depth semi-structured interviews using a standard interview guide, lasting between 20 minutes and one hour. Questions were developed from previous studies, and were designed to verify and build upon existing knowledge about compliance. Interview questions focused on reasons for using a Webster-pak, knowledge about medications, attitudes towards taking medications, general health beliefs, and relationships with healthcare providers.

Analysis

The interviews were tape-recorded, transcribed, and analysed using qualitative techniques. Thematic analysis identified several common topics, from which codes were derived. Each interview was coded separately. Descriptive coding allowed for links and comparisons to be made between participants. Quotes used to support themes were checked against the original data to ensure consistency and accuracy of context. Codes were independently cross-checked by two experienced researchers.

Results

Participant demographics

Five participants were recruited to the study. All five participants were females who lived alone in regional Victoria, aged 48, 75, 83, 84 and 90. They had been using a Webster-pak for between 12 months and eight years.

Reasons for using a Webster-pak

All participants began using a Webster-pak following hospitalisation. Two participants had been admitted for poor medication management – one participant was suicidal prior to hospital admission, and another had unintentionally overdosed on prescribed medications. Two were admitted with cardiovascular disease and one with cancer.

One participant had been prescribed several new medications following a myocardial infarction, and was not entirely sure of the purpose for each medication. For her, the Webster-pak simplified her medication management, and she believed:

‘... all those extra medications ... they’re keeping me right’.

What did participants think of their Webster-pak?

All participants spoke highly of the Webster-pak, claiming they greatly appreciated it and most had never experienced any issues with the packs breaking or several doses being spilled at once. Participants valued the service, as it removed the guesswork from polypharmacy. Responses included:

‘I think it’s just wonderful; ‘I’m quite happy with it’; ‘It’s marvellous, greatest thing ever I think’; ‘It’s been a godsend’; ‘It’s very convenient’; ‘It works well for me’; ‘It helps me remember more’; and ‘I couldn’t live without it’.

Two participants had previously self-prepared pill-boxes, but found this a tedious and mistake-prone process. Pill-boxes frequently failed; several medications spilled out at once, and a lot of effort was required with preparation. Both found Webster-paks to be superior, and one participant was:

‘... relieved when [Webster-paks] came, because it’s just so much more efficient’.
Participants had developed a range of ways to efficiently remove each dose from the Webster-pak, many of which involved the use of a smaller container. One participant claimed she didn’t like the pack at first and had trouble removing a single dose:

‘You pop one out and they go everywhere’.

She had since overcome this issue, saying:

‘You’ve got to do it [expel the dose] down low, or into a bowl. That helps’. Another explained:

‘I have a little container and I put it underneath [the Webster-pak] and press it [through the backing foil] and let all the pills fall into that’.

The simplest adaptation was:

‘I just press it with my fingers and pop it apart. Then I empty it into a small container’.

**Pill-taking routine**

Participants each reported their personal pill-taking routine, which was often associated with a regular daily activity:

‘It’s habit now. Before I do the dishes, before I even clear the table, I’ll go and put them in their thing for the morning’.

‘I don’t take them when I think of them; I take them when I’m going to bed … That’s my routine’.

‘It’s in the morning, with breakfast, or at night, so no, I don’t forget’.

**Knowledge about medications**

Only one participant was able to accurately name each medication and explain its therapeutic purpose. Others had a general idea:

‘It’s for psych problems, depression’.

‘Most of them are for the heart, I think’.

Two participants showed relative indifference:

‘Oh no [I don’t know], there’s just too many’.

‘They were trying so many different tablets. I got to the stage where I couldn’t be bothered asking what they were for, because each time it’d be different’.

For one participant, it was important for her to take her medications correctly, but up until the age of 88 she had only taken one prescribed tablet daily. It was not feasible to expect her to learn a new regime with eight new medications in variable divided doses, so the Webster-pak allowed her to know her medications were correct without her input.

Webster-paks involve a shift in control from the patient to the pharmacist. Four participants in this study appreciated the security of knowing their medications would be correctly dispensed.

‘There’s no problem about any error on my part.’

‘In particular I like to know that I’ve had the right amount of tablets. It makes it a lot easier’.

Despite this, some participants still took an active interest in double-checking their medications, to maintain some degree of ownership over their medications:

‘I know how many there is’.

‘I count them, there’s 10, and sometimes I think the pharmacist has made a mistake; but no, he hasn’t’.

**Managing medications not included in the Webster-pak**

Two participants were prescribed warfarin, the dose of which can frequently change according to blood test results. Their pharmacy chose not to include variable warfarin doses in the Webster-pak, instead including all regular medications within the pack and dispensing warfarin separately. These participants stated:

‘See, the warfarin can’t be there because it alternates a bit, switches and changes. I have to adjust it’.

One participant used a patch for angina. She kept the patches with her Webster-pak.

‘I have to wear a patch at night and take tablets at night as well, so I take them together’.

Another participant had a number of medications not included in her Webster-pak, including:

Paracetamol ‘don’t do a thing for me’.

Tramadol, alendronate (Fosamax) ‘I take a Fosamax every Tuesday. Well, a couple of times I’ve forgotten on the Tuesday and take it on the Wednesday’.

Prochlorperazine ‘normally I only take it for going out’ and ‘a new one for incontinence … the doctor said twice a day, morning and night, but … it made my mouth so dry, so I cut it down … now I’ve gone back to the full one … I don’t know how long I’m supposed to take them … it’s a heck of a lot of tablets’.

**Cost**

The cost charged by pharmacies for preparing and delivering Webster-paks varied between $3 and $5.50. For one participant, the charge was:

‘… a bit expensive … I wouldn’t mind if we got a bit extra in our pension for it, but we don’t’.

Other participants stated:

‘It’s not cheap, but it’s my health. I don’t care. It’s worth it’.

‘It’s the greatest thing ever’.

One participant did not mind the delivery fee, as she had limited mobility and found the service convenient.
Her response may have been influenced by the fact that she had already reached the Pharmaceutical Benefits Scheme Safety Net, and no longer paid a co-contribution for most prescribed medications:

'I'm hoping today it'll only be $3'.

Another participant reiterated a preference for independence:

'I suppose for the convenience of organising your prescriptions, and then it's got to be delivered ... I guess it's not that much. I think it's worth it myself ... otherwise I would have to depend on family to take the prescription in and them to pick them up, and it takes a lot off them ... I consider it to be a good service'.

**Attitude to general health**

Patients’ attitudes to their health can influence compliance. Two participants stated it was very important for them to be well and retain some degree of independence. These participants stated:

'I don't really have any complaints ... It's very important. I work at being well, I really want to be well. I don't want to be careless about it.'

'I'm very grateful to be as well as I am. I don't feel 90 ... up to date I'm managing these things alright, and I hope that continues ... I don't think about it too much ... I'm not getting myself down. I'm determined to keep going as well as I can. It's not good thinking too much about it. I mean you've got to care about yourself, but not over-caring.'

Other participants did not see their health as a priority. Health beliefs were a key contributory factor to suboptimal compliance – one participant believed she was a 'pill-popper', taking too many medications that, in her opinion, she didn't need.

'Some of the things I think, oh, I could go off them. I've asked the doctor and he said no, no, keep taking them. I just feel I'm throwing a lot [down my throat]'.

This participant appeared to demonstrate inconsistent compliance, despite using a Webster-pak. She stated:

'Why should I be throwing that down my throat every day? ... It's a heck of a lot of tablets ... Some of them I don't like ... I just don't take them. Other than that, I just take what I have to'.

At the time of the interview, this participant had physically removed all her doses from the Webster-pak at the correct time, yet she claimed not to have taken certain medications.

Another participant was not actively seeking sufficient therapy to address her conditions:

'I'm inconvenienced a lot [due to incontinence] but I'll put up with it. I'm not running wild to get over to [a specialist] ... I've just got to put up with it. I'll get there. There's worse than me everywhere'.

Depression evoked mixed reactions, depending on acceptance of the diagnosis and understanding of the illness:

'Why do I have to keep taking this tablet for depression? I mean, everybody gets the pip, I really don't need it. Only perhaps on occasions, but they say every day'.

'It was through psych services, because I was suicidal, they decided it would be better for me to get my medication each week ... I do pretty well now'.

**Reasons for suboptimal compliance before using Webster-paks**

The most frequently reported compliance problems before initiating Webster-paks related to forgetfulness. One participant found her memory was deteriorating with age:

'My memory is not good. And I'm sad about that'.

Another struggled to remember to take medications as a result of mental health conditions, major depression and suicidal tendencies:

'I had trouble remembering to take them. It was more forgetting'.

Personal and family concerns caused one participant a great deal of stress, often leaving her flustered – as a result she could not recall whether she had taken her medications, and this resulted in an unintentional overdose.

Generic brands of medications can also lead to confusion, and patients can become upset if the name or colour of a tablet changes:

'I rang [the pharmacist] up and asked 'Why am I taking a new medication? I haven't had that one before.'"

**Discussion**

Patients get confused about complex medication regimes.1 11-19 If the prescribed regime is complex, patients will often not entirely abandon therapy, but instead 'play around' with selected aspects to find what best suits them depending on how 'well' they feel.1

Webster-paks can help to improve patient compliance, and can be applied to a variety of situations.

One study demonstrated lower levels of medication knowledge in patients using Webster-paks.11 Webster-paks can overcome the challenges associated with learning new and often complex medication regimes, especially when patients are prescribed several new medications. If patients do not understand or do not wish to understand
why they are taking certain medications, or how and when to take each dose, Webster-paks can minimise the need for active participation in, and knowledge about, their medication management.

It is important to identify patients who are at risk of poor compliance to prescribed drug therapy to be able to appropriately intervene. Patients who do not take medication as prescribed, either intentionally or not, are difficult to monitor and treat effectively. For patients at risk of suboptimal compliance, Webster-paks reduce the ability to deviate from their prescribed regime, encouraging patients to routinely take all medications as prescribed.

Many studies have stressed the importance of incorporating the taking of medication into one’s daily routine — for example, with breakfast or while getting ready for bed — as a method to improve compliance. Webster-paks may be of use to healthy patients who are not accustomed to routinely taking medications, as the clear, convenient layout may help to prevent missed or forgotten doses. Webster-paks can facilitate safe use of medications, particularly for patients who easily become stressed, confused, distracted or forgetful. Webster-paks are an invaluable visual aid, as patients can see whether they have taken their dose, and thereby avoid under- or overdosing. The regularity of Webster-paks can help to stabilise the condition of patients experiencing severe mental illness, and potentially prevent intentional overdose by limiting supply of medication to one week at a time.

Finally, for patients with deteriorating memory or cognitive function, Webster-paks play an important role in harm minimisation, as they take the guesswork out of medication management. By using Webster-paks, patients can focus on remaining healthy without worrying about getting their medications ‘mixed up’. This confirms findings from previous studies, which indicated that various pill organisers increased compliance and improved therapeutic outcomes for patients.

Compliance could be affected by one’s relationship with their doctor. Patients who have a good relationship with, and trust, their doctor are more likely to feel better, have peace of mind and be compliant. Beliefs that more medications are indicative of worse illness and that medications are unnecessary for symptomless diseases have been shown to negatively influence compliance, as was observed in this study.

Multiple generic brands can lead to overdose, as patients take ‘one from each box’, not realising that they have three boxes of the same medication with different brand names. This lack of continuity can and often does lead to confusion and associated complications.

All participants included in this study began using a Webster-pak following hospitalisation, which in some cases could have been avoided by optimising medication management and patient education. Future research could aim to identify patients who would benefit from such a service before they are admitted to hospital.

The preparation of Webster-paks by community pharmacies is a growing trend, and Webster-paks are becoming more common compliance aids. As many recipients of Webster-paks are pensioners, Government funding or subsidisation of costs could make this service more widely available to patients.

**Limitations**

The sample was very homogeneous, and not representative of the general population. All participants were Caucasian females, living alone in regional Victoria, all were concession card holders, and with the exception of one, all were widows. As such, data saturation was not achieved.

Certain demographics of participants may have been more motivated to participate in this study. As recruitment relied upon participants willingly responding to a written invitation, any person with impaired vision or poor literacy skills was unintentionally excluded from the study. Potential participants who were not compliant may not have been willing to respond and admit that they did not take their medications as prescribed, even when using a Webster-pak.

A number of pharmacies declined the invitation to assist with this study, thereby excluding a large proportion of the possible sample population, as a concurrent national study reviewing the use of dose administration aids was underway.

Potential bias was introduced, as one pharmacy offered to send out letters to a select group of patients who they believed would be more likely to participate, and conducted follow-up phone calls to these patients. As participants from this pharmacy formed the majority of respondents, it cannot be known if results from other pharmacies would be significantly different, or if ‘atypical’ patients were excluded from the study through non-invitation by this pharmacist.

It would be worthwhile conducting a larger study comparing patients who use Webster-paks to those who do not, to see if there are similar factors which affect compliance.

**References**

Health ‘credit card’ proposed

Consumers should be issued with health ‘credit cards’ to pay for health services via HECS-style loans and have the option of trading public hospital benefits for higher GP rebates, according to a new report, Out of pocket: rethinking co-payments in health care, by the Centre for Policy Development (CPD).

CPD Fellow and report author Jennifer Doggett said that direct consumer payments are now the third largest source of health funding in Australia, after Federal and State/Territory Governments. ‘Co-payments contribute over $15 billion a year to the health system, more than double the $8.3 billion contributed by private health insurance,’ Ms Doggett said.

‘Currently more than one in six dollars spent on health care in Australia comes directly out of consumers’ pockets. This is a higher proportion of health spending than in 13 out of 20 OECD countries, including the USA where co-payments contribute only 13% of total funding. ‘Co-payments have a significant influence on how consumers access health care however they are developed and implemented in a policy vacuum. This has led to an ad hoc “system” which is overly complex, expensive to administer, discriminates against certain groups of consumers and does not support the most efficient use of health care.

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