

PharmNote - DOCUMENTATION

#productivity #pharma #pharmacist #nigeria

USER EXPERIENCE RESEARCH

FOUNDATIONAL RESEARCH

Questions answered:

1. What are the identified problems?
2. How can we solve the problem?
3. Do we need to build a digital product?
4. What should we build?

1.0 BACKGROUND OF STUDY

1.1 MY STORY

During my 2nd year break as an undergraduate, I spent some time at a top pharmacy premise in my hometown where I had my first experience of community pharmacy practice which left some indelibly remarkable memories with me. Fast forward to my 4th and 5th year in pharmacy school when I was taught ***pharmaceutical care – that patient-focused outcome-oriented pharmacy practice***. I was able to relate better with the subject in a community pharmacy practice context.

1.1.1 What is Pharmaceutical Care (PC)?

Pharmaceutical Care is a patient-centred, outcomes-oriented pharmacy practice. The pharmacist is working in concert with the patient and the patient's other healthcare providers to promote health, prevent disease, and to assess, monitor, initiate and modify medication use, to assure that drug therapy regimens are safe and effective. The goal of pharmaceutical care is to optimise the patient's health-related quality of life, and achieve positive clinical outcomes, within realistic economic expenditures (*Minaz, 2011*).

Table 1: Differences between traditional drug dispensing and pharmaceutical care

Traditional drug dispensing	Pharmaceutical care
Focus on dispensing the medicine	Focus on patients' management and outcomes with the drug treatment
Patients' education and counseling concentrate on technical advice.	In addition to technical advice, the pharmacist is educating the patient to practice the drug treatment in everyday life.
No monitoring of the outcomes of drug treatment	The pharmacist is finding methods to monitor the outcomes of drug treatment.
DRPs would emerge if the patient complains about them	The pharmacist is actively and systematically identifying possible problems in the drug treatment
No responsibility for the drug treatment	The pharmacist takes responsibility that the drug treatment goal will be achieved

Source: Azuka C. Oparah: Models of Pharmacy practice in: Essentials of pharmaceutical care, 2010 p. 8

Reference: Clinical Pharmacy in Nigeria: Issues, Challenges and the Way Forward By Professor Chinwe Victoria Ukwue, University of Nigeria, Nsukka.

As large as the premise was, there was just a single full-time pharmacist with the responsibility of keeping stock to ensure continued availability of drugs, managing other staff, counselling patients, following up on therapy outcome, reviewing prescriptions, treating menial ailments and so

on. *Such workload is mostly the trend in pharmacy premises in Nigeria which might be traced to an overall business goal of maximising profits and minimising expenses.*

2.0 HYPOTHESIS

I guessed that this trend makes it more difficult for a single pharmacist to be optimally effective in his/her duties and in esteeming the practice of PC even though he is well trained and aware of the benefits of such. There's high tendency for lack of an effective patient/therapy follow-up to monitor therapy outcome, ensure therapy compliance and enhance reporting of side effects which can be because of the following reasons:

1. Lack of proper therapy documentation.
2. Pharmacists forgets to follow up due to stress from attending to tons of patients per day. It might get more stressful going through all consulted patients' records at the end of each day to identify patients that should be followed up.
3. Lack of unidentified established means of communicating promptly with individual patients.

3.0 SECONDARY RESEARCH:

I started conducting secondary research by reviewing literature, articles, journals, and research works. I was unable to get sufficient research materials conducted for the system of pharmacy practice that works in community pharmacies in Nigeria, so I had to widen my tentacles and depend on insights from research work conducted within Africa as an alternative sample space. I met a similar roadblock and eventually had to tone down my attention on the geographical location of research works.

I researched on PC practice with community pharmacies and on how the advent of technology has contributed to the practice (This was majorly because the essence of my research was to create a usable digital product that solves a problem in pharmacy practice)

3.1 LITERATURE REVIEW 1A: PROMOTING/ENHANCING PHARMACEUTICAL CARE PRACTICE OF AN OVERWORKED COMMUNITY PHARMACIST

A study of the extent and barriers in providing pharmaceutical care services by community pharmacists in Malaysia concluded that community pharmacists in Malaysia were not providing adequate pharmaceutical care services compared to international practice principles and highlighted areas that need improvement as follows:

- Collaboration with patients' other health care providers.
- **More proactive management of patient's medicine regimen.**
- **Having proper patient monitoring and follow-up mechanisms, and**
- **Documentation.**

The study also suggested that programs for the continuous professional development of community pharmacists should include **comprehensive training on the provision of pharmaceutical care** (Loh et al., 2021).

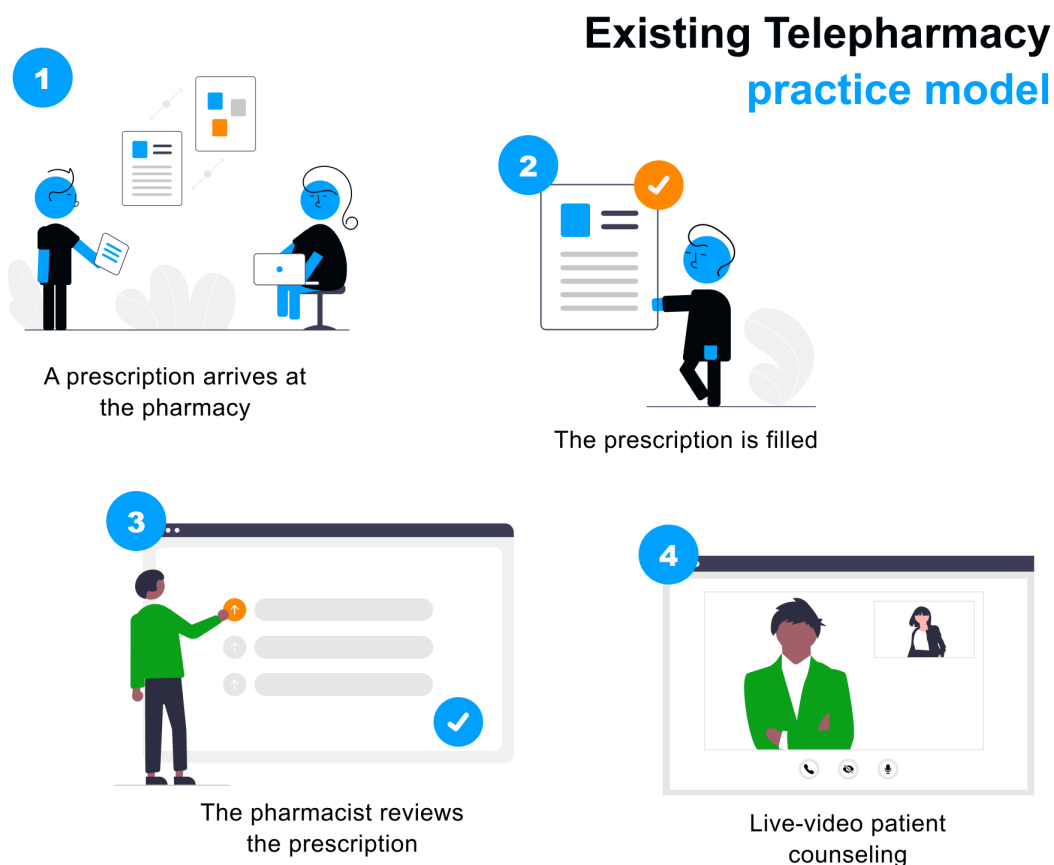
Similarly, a study on the attitude and practice of community pharmacists towards PC in Nigeria agrees with studies from other parts of the world revealing poor practice of pharmaceutical care among community pharmacists in Delta highlighting barriers as **lack of personnel, lack of collaboration with other healthcare providers, lack of space, non-acceptance by physicians and nurses, and lack of pharmaceutical care skills** (Amibor & Okonta, 2019).

3.2 LITERATURE REVIEW 1B: TELEPHARMACY PRACTICE IN NIGERIA

I started out researching how tech can be used to solve this problem by increasing the productivity of the pharmacist. This led me to carry out secondary research on the concepts of “**Telepharmacy**” together with the challenges/limitations/barriers encountered in Telepharmacy practice.

According to the National Association of Boards of Pharmacy, “Telepharmacy is the **provision of pharmaceutical care through the use of telecommunications** and information technologies to **patients at a distance.**”

This practice has been used in the U.S since 2001 and has been shown to have a lower error rate than a traditional pharmacy. “The retail Telepharmacy is a brick-and-mortar location staffed by one or more certified pharmacy technicians...the facility is supervised by a pharmacist who reviews prescriptions and counsels patients **remotely** from a host pharmacy, which is a traditional pharmacy location.”
[Telepharmacy Academy email drips from TelePharm, a Cardinal Health company]



[I made this to illustrate how Telepharmacy works in operational states from insights gotten from Telepharmacy Academy. Click [here](#) to see video]

This model faces legal issues in most countries especially in Nigeria. Studies carried out by Tech Cabal on the regulatory landscape of health tech in Nigeria which highlighted the regulatory checklist of health tech in Nigeria also presented the lamentations of entrepreneurs in Nigeria on the lack of a solid regulatory framework for Telepharmacy practice. *It also highlighted current legal stipulations as **unauthorised disclosure of patient records, and Hacking and unsecured records** (TechCabal).*

This finding raised my eyebrows a little as I'm not a policy maker and have no power over the law, but I ensured to keep this in my mind and that the due process is followed when need arises to share patient's records.

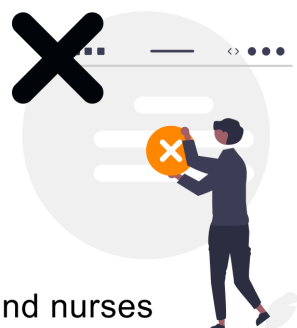
The seeming roadblocks I encountered in my research, especially while considering the viability and usability of existing telepharmacy model in Nigeria laid me aback a bit in this case study but then I imagined that a solution that eliminates the hassle in the existing model and concentrates more on enhancing the productivity of community pharmacists in country like Nigeria should work. So, I decided to concentrate on **creating a solution that promotes proper documentation, enhances patient/therapy follow-up to monitor therapy outcomes and minimise potential DTPs (Drug Therapy Problems).**

3.3 INSIGHTS FROM SECONDARY RESEARCH

3.3.1 Hindrances to pharmaceutical care practice

Hindrances to pharmaceutical care practice

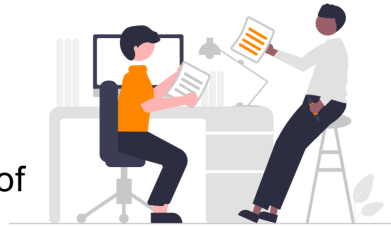
- 1 Lack of personnel
- 2 Lack of collaboration with other healthcare providers
- 3 Lack of space
- 4 Non-acceptance by physicians and nurses
- 5 Lack of pharmaceutical care skills



3.3.2 Solutions to barriers encountered in providing pharmaceutical care in community pharmacies

Solutions to hindrances of pharmaceutical care practice

- 1 Collaboration with patients' other health care providers.
- 2 More proactive management of patient's medicine regimen.



- 3 **Comprehensive training on the provision of pharmaceutical care**
- 4 **Having proper patient monitoring and follow-up mechanisms.**
- 5 **Documentation**

I was taught to avoid solving multiple problems at once but rather start out with one or a few problems. So, I decided to create **a solution that provides sustainable follow-up mechanisms, allows proper patient monitoring, and educates pharmacists on the importance of pharmaceutical care.**

3.3.3 My reasons for starting with creating solutions for barriers 3-5 highlighted in Subsection 3.3.2:

- A solution that provides sustainable follow-up mechanisms and allows proper patient monitoring should not attract any legal traction or stipulation especially in a slowly developing country like Nigeria. This is because the identified legal stipulations are majorly around documentation and sharing of patient information.

- Following-up on patient therapy is a good customer retention strategy as it promotes patient-pharmacist relationship. This means more money for entrepreneurs and pharmacy premise owners as it turns first-time buyers to repeat buyers.
- Education of pharmacists on pharmaceutical care will allay fears, learn from experiences, and encourage entrepreneurs to invest in its practices.

3.4 LITERATURE REVIEW 2: PATIENT MONITORING AND FOLLOW-UP MECHANISMS

A paper published by *Lori MacCallum* and *Lisa Dolovich* in 2018 highlighted the following:

1. Regular monitoring and follow-up are not common in community pharmacy settings.
2. Regular monitoring and follow-up are critical in chronic disease management such as diabetes, heart disease, hypertension, etc.
3. Regular monitoring and follow-up are helpful in almost all circumstances of chronic disease management

The paper also highlighted many barriers to routine monitoring and follow up, some of which includes:

1. Time constraints and workload: too many competing priorities in the pharmacy workplace.
2. Lack of pharmacy management support
3. Lack of patient knowledge of the pharmacist's ability
4. Poor understanding of the scopes of practice/services of pharmacy professionals in the healthcare system.

[Click here to access referenced paper here](#)

EXISTING PATIENT FOLLOW-UP CHANNEL

- i. Phone calls
- ii. Mail
- iii. Video Call

MY PROPOSED PATIENT FOLLOW-UP CHANNEL

For the young patient/customers

- i. Phone calls

- ii. Social media (WhatsApp)
- iii. SMS/text message
- iv. Email
- v. Video call

For older patient/customers

- i. Phone calls
- ii. SMS/text messaging
- iii. Video call

WHAT DOES A PHARMACIST DO DURING A PATIENT FOLLOW-UP SESSION?

Some of the duties of a pharmacist during a follow up session includes:

- Actual results and outcomes from drug therapies are evaluated and documented.
- Patients are reassessed for any new drug therapy problems
- Evaluation of patient's adherence and its influence on therapy outcomes.
- Evaluation of common Adverse Drug Reactions

Reference: (*Chapter 8. Follow-Up Evaluation | Pharmaceutical Care Practice: The Patient-Centered Approach to Medication Management Services, 3e | AccessPharmacy | McGraw Hill Medical*)

3.5 HOW PROFITABLE IS INVESTING IN PATIENT MONITORING AND FOLLOW-UP? IS IT GOOD FOR BUSINESS?

A study conducted in 2016 to determine if a follow-up telephone call or letter affects the return rate to the pharmacy of first-time patients filling a prescription from a visit to the Convenient Care Clinic saw an increase in patient return to the pharmacy following their first prescription fill from **the telephone calls more so than from the mailed letters. Aiming to maintain new customers at the same pharmacy would result in a beneficial increase in prescription fills for the business as well.** The act of the pharmacist following-up with the patient after their first time filling a medication gives the pharmacist the opportunity to make the personal connection with the patient and therefore may encourage the patient to return for additional prescriptions. The study concluded that, because the telephone

call group yielded the greatest rate of patient return to the pharmacy, pharmacies could benefit from having pharmacists or pharmacy technicians follow-up with new patients after their first prescription fill (Schroeder et al., 2017)

Good for business, right? I think so, too.

This shows that investing in patient follow-up practices can boost business goals and increase **customer retention capabilities of a pharmacy.**

4.0 PRIMARY RESEARCH

I conducted the following survey (primary research) to find out if these problems exist, to know if the cited hindrances to pharmaceutical care (*insights from secondary research*) still exists in the world of today as most referenced publication dates to a pre-COVID era and to find a solution that practising pharmacists (potential users of my intended product) recommends, especially to allow proper patient monitoring and follow-up mechanism.

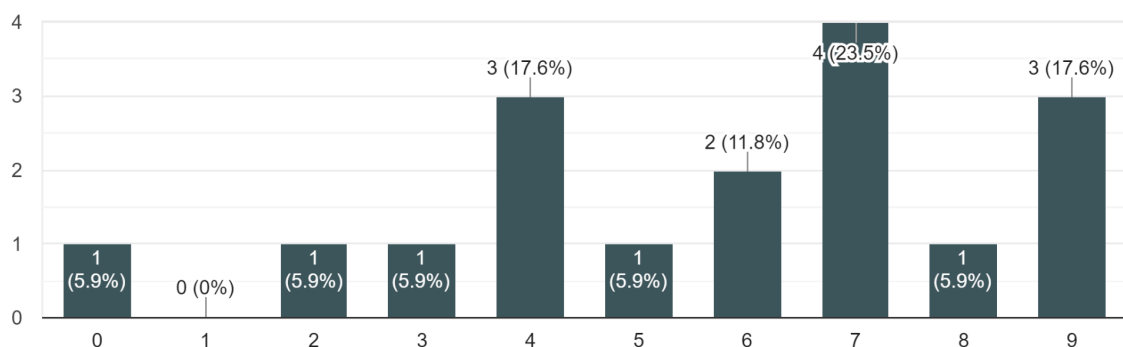
Survey/Questionnaire

Checkout survey questions [here](#).

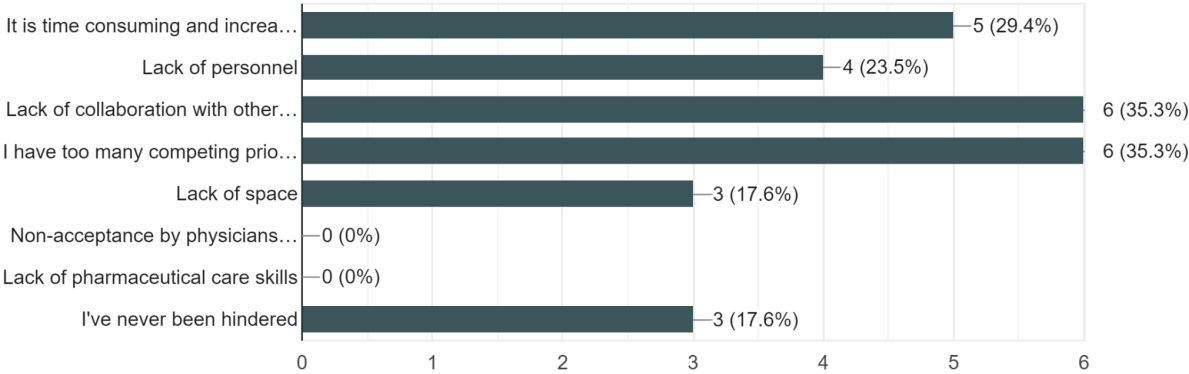
ANALYSIS OF RESPONDENTS

On a scale of 0-9, how much do you practice pharmaceutical care in your pharmacy?

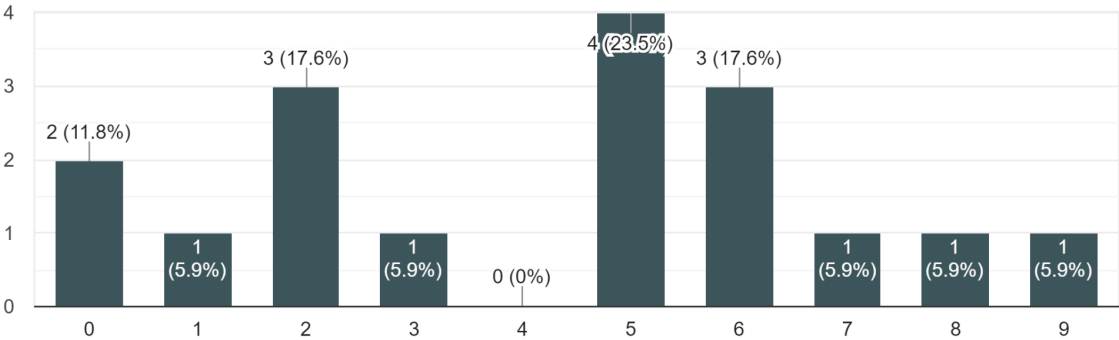
17 responses



What are the hindrances you've faced in practicing pharmaceutical care in your pharmacy?
17 responses



On a scale of 0-9, how much do you follow up patient for therapy compliance and therapy outcome?
17 responses



How do you go about following up patient for therapy compliance and therapy outcome?
17 responses

Through phone calls and visit

WhatsApp, phonecalls

None

By checking up and making sure right medication is taken at the appropriate time

Via phone calls

I put a phone call across and reach out to them.

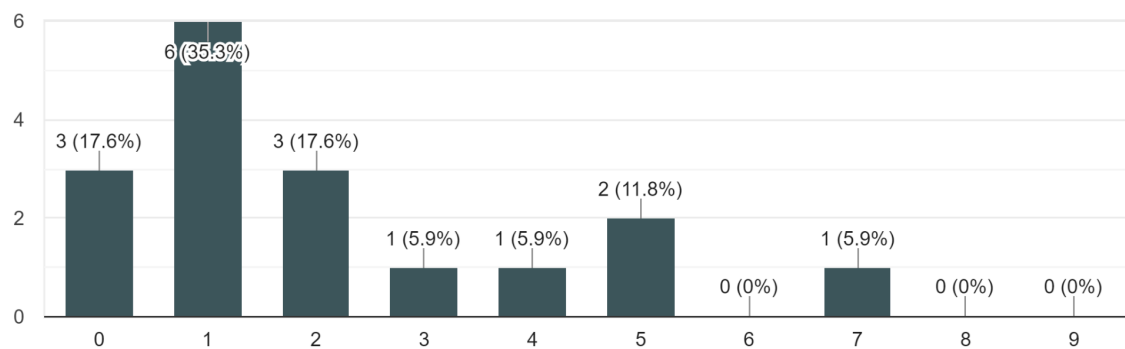
Phone contacts

I call my patients to follow up on them

Chat them up

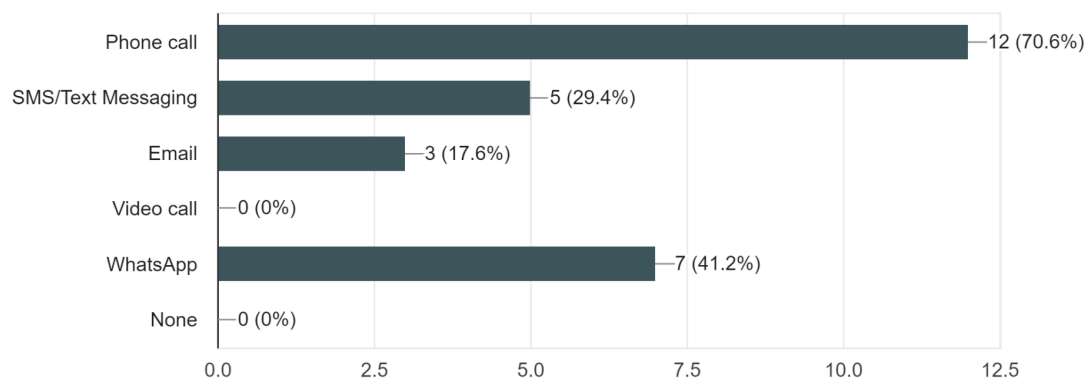
On a scale of 0-9, how much do you document your patient counselling sessions?

17 responses



Considering the age groups of most of your customers, which of these channels do you think is best suited and cost-effective for you to use in following them up?

17 responses

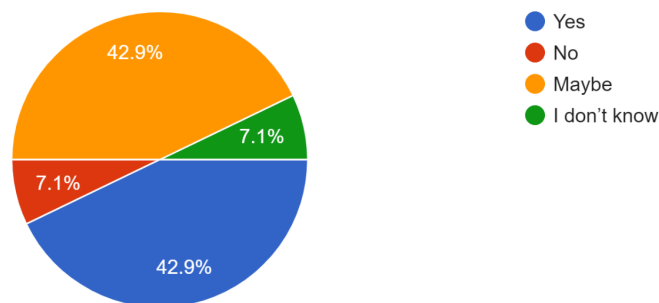


How do you think the hindrance(s) you face can be solved in your own opinion?

13 responses

- Appropriate patient record and telepharmacy channel
- By having an assistant to remind me to do that.
- Public enlightening
- Management Support
- Employment of more pharmacists such that pharmacist-to-patient ratio is rationalized.
- Probably creating a database for each patient on the system, and giving them numbers from such data base, so whenever they come in, they will tell their number, so the Pharmacist can get access to the previous medications and know the necessary question to ask Incase there are other complaints.
- Giving pharmacist more relevance in the hospital
- NONE

What if you schedule general patient's follow-up to weekends while you schedule patient therapy adherence and regimen compliance follow-up to c...hours during weekdays, would that work for you?
14 responses



Overview and Observations:

I shared the survey to social media groups of practising pharmacists with permissions from accessible group administrators and personally to senior pharmacists that I know. I was only able to get just 17 responses overall. This is quite discouraging to me but maybe I learnt a lesson of how difficult it might be to gather insights from users. I know that going to the field to visit pharmacies and interview them will be good for this study, but that's too expensive for me and after all, this was intended to be a case study? *(I can do more if the opportunity to make this a real project presents itself, so please go easy on me a bit, dear hiring manager)*

I know the sample space is ridiculously small (I had to say it before you do), so it won't be smart to base conclusions and make decisions from it. So, I only used it where it coincides with inferences from my secondary research. I presented this in the table below:

TITLE	FROM SECONDARY RESEARCH	FROM SURVEY (PRIMARY RESEARCH)
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Barriers in practising pharmaceutical care	<p>Lack of personnel,</p> <p>Lack of collaboration with other healthcare providers,</p> <p>Lack of space,</p> <p>Non-acceptance by physicians and nurses, and</p> <p>Lack of pharmaceutical care skills.</p>	<p>It is time consuming and increases stress and tension (3)</p> <p>I have too many competing priorities in my workplace (3)</p> <p>Lack of personnel (2),</p> <p>Lack of collaboration with other healthcare providers (2),</p> <p>Lack of space (2).</p>
Possible Solutions to pharmaceutical care practice barriers	<p>Collaboration with patients' other health care providers.</p> <p>More proactive management of patient's medicine regimen.</p> <p>Having proper patient monitoring and follow-up mechanisms.</p> <p>Comprehensive training on the provision of pharmaceutical care</p> <p>Documentation.</p>	

<p>Barriers to patient monitoring and follow-up</p>	<p>Time constraints and workload: too many competing priorities in the pharmacy workplace.</p> <p>Lack of pharmacy management support</p> <p>Lack of patient knowledge of the pharmacist's ability</p> <p>Poor understanding of the scopes of practice/services of pharmacy professionals in the healthcare system.</p>	<p>I forget to follow up most of the time (2).</p> <p>My workload is too much for me to be following up on patients individually (1).</p> <p>Adding follow-up to my daily schedule will be too much for my existing workload (1).</p> <p>Lack of pharmacy management support (2).</p> <p>Lack of patient knowledge of the pharmacist's ability (2).</p> <p>No existing channel that I'm aware of that will help me follow-up patients easily.</p> <p>Language barrier (1)</p>
<p>Possible Solutions to patient monitoring barriers</p>	<p>-</p>	<p>Setting a reminder,</p> <p>Management Support,</p> <p>By having an assistant to remind me to do that,</p> <p>Public enlightening,</p> <p>Adequate record keeping system,</p> <p>Patients' contacts could be written on prescriptions as well.</p>

Convenient Channels for patient follow-up	Mail Phone calls Video Meeting (prescription filling & review)	Phone call (5) SMS (1) WhatsApp (3)
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None of the respondents have more than 10 years of practice experience. Two (2) out of 7 respondents (or formally 28.6%) have more than 5 years of practice experience, 2 out of 7 have more than 2 years of practice experience while the remaining 3 have 0-2 years of practice experience.

On a scale of 0-9 on how much pharmacists follow up patients and practice of pharmaceutical care, 5 out of 7 respondents were above 4 to the 'always' (positive) side. While on the same scale range for assessing how much pharmacists document patient counselling sessions, only 2 respondents were above 4 to the 'always' (positive) side. I couldn't make something tangible out of this because of the small sample space and because of the need for further studies to find out why pharmacists might not be documenting consultation sessions. Such study will help evaluate the importance of creating a solution for that.

I related the observations from the table with that of the secondary research and grouped the emphasis on patient follow-up into Pharmacists' pains and pharmacists' own proposed solutions:

S/N	Pain points	Solutions
1.	Forgetting to follow-up most of the time possibly due to existing workload.	Having a reminder (person/assistant or app??) Adequate record keeping for patient's contacts
2.	Lack of pharmacy management support	Management support
3.	Lack of patient's knowledge of pharmacist's ability	Public enlightening

Pharmacists' pain point 1 and solution affirms my hypothesis 1 & 2. I got suggestions indicating how a reminder can help but reminder can be a mobile APP or personal assistant (as suggested by one of the respondents). I thought of the cost-effectiveness of that as that would mean adding a new staff in every location which management might not be excited about. And who will hire a staff member to just be reminding the pharmacist to follow up? Also, adding that to the role of a pharmacy technician might not be effective because no one can guarantee a human being's memory. **A digital tech solution would work here, an APP like Google Keep or Evernote.**

How about the workload?

I think a solution to overtly reduce the workload of a pharmacist in a community pharmacy will have to be designed to suit individual pharmacy premises and together with management's weigh & balance of what that might mean to their profit, but I thought of a proposed work calendar that is management approved and can be made to work with the earlier proposed APP. Or better still, just a reviewed work calendar that gives room for patients' therapy follow-up on weekdays or weekends.

From Q8 in the survey I conducted, 5 out of 7 respondents were indifferent about this while 2 out of 5 respondents responded affirmatively that a calendar like this would help. I illustrated/proposed such work schedule the in the example below:

Example 1: Weekday

Tuesday: Evening 5-7pm

Thursday: Evening 5-7pm

Saturday: Morning 9am-11am

Example 2: Weekends only

Saturday: 9-11am

Sunday: 2-4pm

Possible downside: Patients with treatment regimen of 3-5days might have started and ended their therapy before being followed-up.

Another advantage of this practice is that if instilled, patients will get used to the time to expect the pharmacist to follow-up and check up on them and visiting patients

would know the time the pharmacist will only be available for follow-ups. **I think this will help to instil patients' knowledge of the pharmacist's duty and aid public enlightenment.**

Of course, this should be planned with an understanding of the periods of each day when the pharmacist has the highest and lowest influx of consulting or new patients and can be designed to be flexible.

I think this can serve as management support and structure. More ways management could help is by providing airtime & data for calls/text/chat. I think this to be more cost-effective than hiring a new staff and encourages the pharmacist to follow-up.

The need for a digital solution to remind pharmacist to follow-up patient

Why can't we use any of the existing digital solutions (productivity App) like Google Keep or Evernote or even just an alarm?

My thoughts are:

- I. Existing productivity apps like Google Keep or Evernote are not designed to suit the needs of a profession but rather an individual. It can be difficult to separate work to-dos from personal to-dos.
- II. I know a couple of people around me separate their class notes from personal diary, work notes, etc. and might end up having different notes for different reasons, possibly because some of these notes need to be kept private and the urge to be organised.
- III. Most of the existing APPs store to the cloud and there are regional ethical and legal stipulations as to the privacy and safety of patients' data from hackers.
- IV. I know that Google Calendar allows custom setting an event and reminder to repeat itself every week so that might not be a thing, but I intend to create an all-in-one solution that allows pharmacists to schedule follow-up task to be reminded and allow them to network and keep patients record privately and easily.

PROPOSED PRODUCT:

An application (preferably mobile APP) that allows pharmacists to follow up and monitor patients therapy easily and set patient-specific to-dos/follow-up questions (something like a checklist of things to follow up patients on), custom remind patients of refills and allow pharmacists to learn or follow audio events/podcasts around them to promote enlightenment of pharmaceutical care practices. The App can also allow pharmacists to keep notes/jottings or formally record patients consulted (text & audio) privately, if possible, because I know there are ethical concerns as to the privacy and safety of patients' data, if stored on the cloud. The App should be able to communicate via call and text messages such that the pharmacist can send messages directly to the patient's contact from it and get responses within the APP.

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