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The Reforming of an Assistive Technology Resource for the Use of Pharmacists' to Provide Better Pharmaceutical Care for Patients With Sensory Impairment

INTRODUCTION

Background Research:

Interviews with 23 sensory impaired (hearing and/or visual impaired) patients found that there was a lack of pharmaceutical care for these patients. [1] Interviews with Pharmacists' confirmed that community based care for sensory impaired patients was heavily overlooked. [2]

Next Steps:

 SIPA 2 researchers created an excel spreadsheet of information containing Assistive Technology products to aid sensory impaired patients with their pharmaceutical needs. (Figure 1)

Aim of Study:

 To create a suitable resource for Pharmacists' to use in order to recommended products to patients with sensory impairment, by using the information from the SIPA 2 excel spreadsheet. The final resource designed was validated in usability tests with pharmacists' to ensure it was fit for the intended purpose. Thus improving the pharmaceutical care for sensory impaired patients.

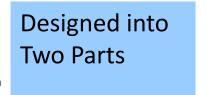
METHOD

Improving the resource

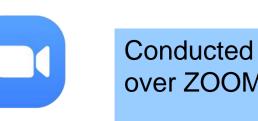
- Reform the original SIPA 2 excel spreadsheet into a suitable 'user friendly' resource a pharmacist could use to help in a consultation with a sensory impaired patient. This was designed using Excel.
- PDSA (PLAN, DO, STUDY, ACT) cycles were used to record changes and for quality improvement. [3]
- Changes to produce the final resource included:
- Organisation of columns
- Addition of filter functions
- Visually aesthetic changes
- Once the final resource was completed, in order for the changes to be validated a Usability test was designed and conducted. (Figure 2)

Usability Test











Part 1:

- Participant gave thoughts and opinions upon first look of resource
- Three patient-based scenarios provided with the task to find a product for the patient with sensory impairment. (Mimicking a real life consolation).
- 'Think Aloud' method applied as participants used resource, unfiltered and concurrent opinions regarding the resource were recorded

Part 2:

- Participants completed a questionnaire based on the **Technology Acceptance** model framework.[5]
- > This measure the 'perceived usefulness' and the perceived ease of use' of the resource
- 12 statements answered on a 5 point 'Likert' scale.
- Strongly disagree to Strongly Agree

RESULTS

Improving the resource (PDSA cycle) results

The Final resource produced (Figure 2)

Usability test results:

Part 1:

- Qualitative data analysed using Braun and Clarke's (2006) framework [6]
- Inductive bottom up approach applied using Ryan & Bernard (2003) line by line approach to code data from the usability tests.. [7]
- Three major themes identified from usability test results:
- ☐ The content in the resource,
- ☐ Searching for products using the resource
- ☐ End user (The Pharmacist) using the resource.

Content theme: "quite straightforward and easy to understand" (P4) "categories look fine, and they make sense" (P2)

Searching theme: Filter functions added on excel: "in terms of resetting the End User theme:

Pharmacists using the

resource in practice:

"In practice, like it would

actually save you so much

time and make you more

helpful for people" (P2)

filters... probably excel isn't the best program for this" (P8)

Part 2:

Likert scale results:

'Perceived Usefulness' was measured on a Likert scale, by compiling the results of the 6 statements answered by participants regarding the 'Perceived Usefulness' of the resource. The percentage responses from all the participants to each statement were calculated, to provide an overall analysis of the 'Perceived Usefulness'. The same was done with the 'Perceived Ease of Use'. (Figure 3 and 4).

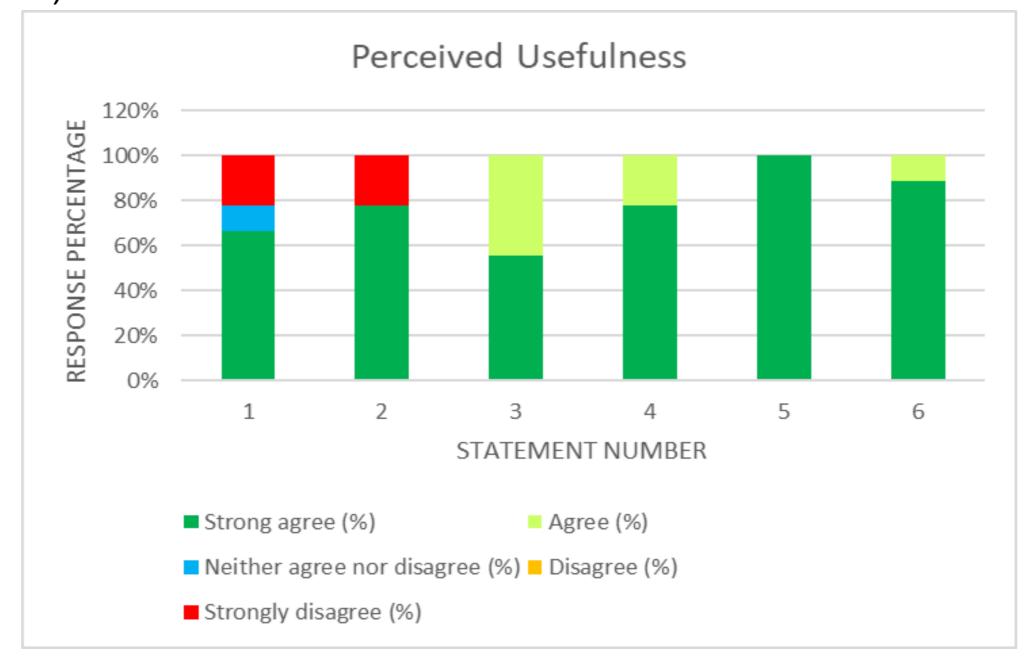


Figure 3: Bar graph of the results from the Likert scale for 'Perceived Usefulness'

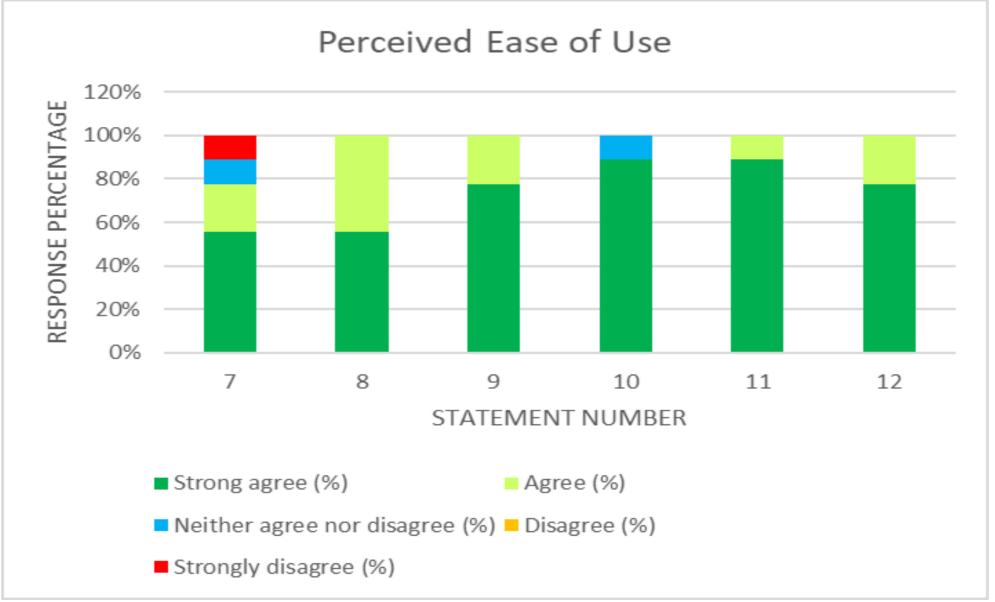


Figure 4: Bar graph of the results from the Likert scale for 'Perceived Ease of Use'

SIPA 2 ORGINAL EXCEL SHEET

Yellow indicates a prod	duct group, where s	everal similar items exis	t													
Product name	lmage (and image tag description)	Brand/Manufactu	Where the product was found during the search (named specialist database, webpage, catalogue)	∀ eb link to manufacturer	tech data sheets, instructions etc - download available documents and store?)	Brief decription	Detailed description including key features	Names of key suppliers and their link to the product (UK)	Note any suppliers (outside UK) if found in the course of searching		Is it a general product, or specifically intended to support medication use?	Named target market (older people OP, visual impairment VI, hearing impairment HI,	VAT exempt? (if so, by definition it has been designed for disabled people or those with LTCs and is		Specifically helpful for hearing impairment? (Y/N)	Specifically suitable for person with (hearing/vis impairment
	0\						USB rechargeable battery, folding portable, table top, clamp, floor	Amazon, CareCo, Argos,					Yes, depending on			
Lamp with magnifier	7	Daylight Co Ltd	Eastin	www.daulightcompanu.co.uk	Downloadable fact sheet	Lamp with magnifier	standing,	Complete Care Shop		£55-295 inc VAT	General product	VI	supplier	Y	N	N
Eye drop dispenser		Aidapt	Eastin	www.aidapt.co.uk	Downloadable spec sheet	Eye drop administrator	Helps open the eye, adjusting eye drops straight to the right place and administering the right dosage of eye drops	Millercare, Complete Care Shop, RNIB, Ability Superstore		£2 - £8.99 inc VAT	Specific		Yes, depending on supplier	Y	N	N
Pivotelll Pill Popper Tablet Blister Gun	ô	Pivotell Ltd	Eastin	www.pivotell.co.uk	None on website	Aid to push tablets from blister pa		Pivotell, Complete Care Shop, Amazon		£19.99 ex VAT - Pivotell	Specific		VAT exempt	Υ	N	N
AM/PM, Weekly and Monthly Pill Organisers	ø	Pivotell Ltd	Eastin	www.pivotell.co.uk	Information sheets on Aidapt web		Compartments for multiple doses per day. Some have individual day sections that come out. Vary in capacity and whether daily, weekly or monthly.	Aidapt, Carex Health Brands		£13.50 - £18 ex VAT - Pivotell	Specific		VAT exempt	Υ	N	N
Tablet crusher	PQ	Aidapt	Eastin	www.aidapt.co.uk	Information sheets on website	Aid to crush tablets	Screw, grind or compression action to crush tablets to make it easier to swallow. Some also cut	1		£1.20-£120 inc VAT	Specific		Yes, depending on supplier	N	N	N
Tablet splitter	۵	Aidapt	Eastin	www.aidapt.co.uk	Downloadable spec sheet	Aid to split tablets	Device to store and cut tablets.	NRS, Millercare, Complete Care Shop, Ability Superstore		£1.66-£9.99 inc VAT	Specific		Yes, depending on supplier	N	N	N
Oralflo pill swallowing cup		Oralflo	Eastin (for Danish version). Google for UK supplier	www.oralflo.com	None on website	Cup with insert for tablet	Cup with dispenser in order to swallow tablet at the same time as having drink	Ninelife		£37.20 inc VAT - Ninelife	Specific		No	N	N	N
Pill reminder with alarm	1	Aidapt	Eastin	www.aidapt.co.uk	None on website	Pill organiser with alarm	Programmable alarm with three compartments for storing pills	Mediworld, Millercare		£9.99-14.95 exc VAT	Specific		Yes, depending on supplier	N	N	N
Blister pen pill remove		Maddak	Eastin	www.maddak.com	Pictoral instructions on website	Tool to get tablets out of blister p	Pointed tip cuts through blister pa	a Ninelife	SP Ableware	£47 inc VAT - Ninelife	Specific		No	N	N	N
Magnifying pill cutter	a 🕅		Eastin	Supplier - www.astleymobility.com	None on supplier websites	Pill cutter with magnifying lens	Pill cutter to accurately cut pills. 2x magnification	Australian supplier		\$18 AUS	Specific	VI	No	Y	N	N
Vigil-Aide Medication Reminder Alarm	9 I	DCT Associates	Eastin	www.dotassociates.com.au	None on website	An alarm system set to particular times	sounds and will continue until	Australia - DCT Associates		No detail on website	Marketed as specific product, but could be used for other things		No	N	N	N
							Attaches to medicine bottles and									

Figure 1: Screenshot of SIPA 2 Original Excel Spreadsheet

FINAL RESOURCE PRODUCED



Figure 2: Screenshot of Final Resource Produced During Project

KEY FINDINGS AND CONCLUSIONS

- Results confirmed the resource was successful for the aim of pharmacist to recommend a product to a patient with sensory impairment. Positive responses within the Usability test (from the identified themes) confirmed the resource worked well for the intended purpose. Likert scale responses showed a positive response to 'perceived usefulness' and 'perceived ease of use', with majority answers being "Strongly Agree" and "Agree" to the statements.
- 2. The form in which information has been structured can be used for further development into an app or website for better accessibility as excel may not be the best format for final product.
- 3. Further development into the resource being made accessible to all areas within health and social care.

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