Barriers to Pharmacist-Child Communication: Implications for Providing Medication Counseling in Community Pharmacies

Olufunmilola Abraham, PhD, MS, BPharm

University of Pittsburgh School of Pharmacy
Department of Pharmacy and Therapeutics
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Email: olufunmilola.abraham@pitt.edu

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  - *Co-PI*: Delesha Carpenter, PhD, MSPH (UNC)
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Outline

- Background
- Methods
- Results
- Discussion
- Implications
- Limitations
- Future Research

Background

Background

Substantial increase of pediatric chronic conditions

- Over 6 million children in US have chronic conditions requiring management with medications[1]

Children are major consumers of medications

- Over 263 million prescriptions dispensed for pediatric patients annually[2]

Concerns with unsafe use of pediatric medications

- Children with chronic conditions have a higher risk of improper administration, dosing errors, & nonadherence[3-5]

Background

Pharmacists are accessible medication experts

- Over 60,000 community pharmacies in US neighborhoods & 93% of Americans live within 5 miles of a pharmacy[6,7]

Need for pediatric pharmaceutical services

- Communication about medicines with children can improve adherence, disease self-management, & outcomes[8-10]

Research Gap

USP emphasizes healthcare professionals directly provide developmentally appropriate medication information to children[11]	Little is known about current pharmacist-child communication
Children are often not engaged in discussions with healthcare professionals about treatment & decision-making[12,13]	Limited evidence of pharmacists' perceptions concerning medication counseling with children
Children with chronic conditions desire to be more involved in treatment, decisions, & medication-taking processes[14]	Minimal research exploring perspectives of children & parents regarding medication counseling by pharmacists

Objectives

Objective 1

Characterize community pharmacy staff interactions with children & their parents

Objective 2

Describe pharmacy staff-reported barriers & facilitators influencing ability to provide medication counseling to children

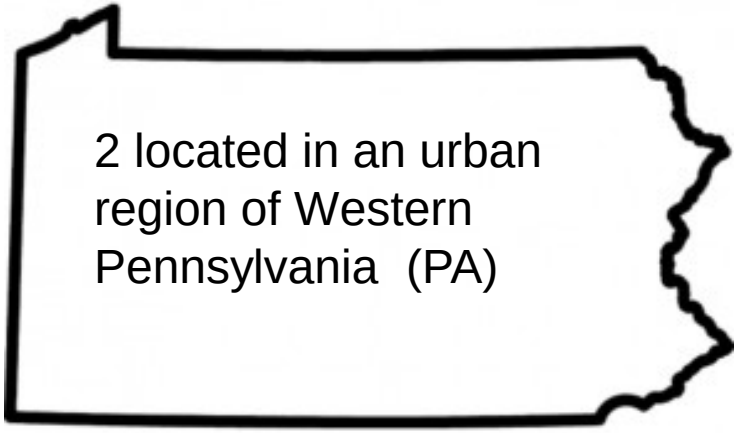
Objective 3

Explore children's & parents' perspectives of pediatric medication use experiences & pharmacist-provided patient counseling

Methods

Recruitment & Study Sites

3 community pharmacies



*1 independent pharmacy & 2 grocery chain pharmacies

Study Sample: Objectives 2 & 3

Eligibility

- Pharmacy staff
  - Pharmacists & pharmacy technicians who have worked at the recruiting pharmacy ≥ 6 months
- Children
  - Ages 7-17 with a chronic condition
- Parents
  - Picks up child's prescription from pharmacy

Participants

- 10 pharmacists, 6 pharmacy technicians
- 20 Children
  - 2 children with same parent
- 19 Parents
- Recruitment
  - Pharmacy manager, staff, flyers

Data Collection

Objective 1: Observational Study

- 14 day period of observation by 2 researchers in 3 pharmacies in NC & PA
  - 1 week in May, 1 week in June 2015
  - Prescription information for children ages 7-17
- Observation guide used to document:
  - Date, time of pick-up & who was present, counseling, pick-up location (drive thru VS walk-in), wait time, # of questions asked, parent gender, child & parent race/ethnicity
- Demographics from pharmacy prescription record
  - Child age, gender, medication name, indication, & type (new vs refill)

Objectives 2 & 3: Semi-structured Interviews

- 2 researchers conducted face-to-face (PA) & telephone (NC) interviews lasting ~20-45 minutes
  - May - December 2015
- Pharmacy staff, children & parents
- Interview guides elicited perspectives of pediatric counseling needs & medication use experiences
- Demographic data documented
  - Age, gender, race/ethnicity, education/grade level, pharmacy practice experience, parent marital status & annual household income
- Audio-taped & professionally transcribed verbatim

Data Analysis

Objective 1

- *Quantitative Analysis:* Descriptive statistics calculated to characterize study sample, picked-up prescriptions & families' interactions with pharmacy staff
  - Frequencies, percentages, means, standard deviations were calculated
  - Dichotomized counseling behaviors: 1= either child or parent received counseling, 0 = neither received counseling
- Logistical regression examined counseling predictions based upon demographic/prescription characteristics
  - Independent variables: child age, gender, race, prescription type (new vs refill), acute or chronic medication, prediction of counseling at urban vs rural
- IBM SPSS Version 23 software & prior significance level was set at $\alpha=0.05$.

Objectives 2 & 3

- *Qualitative Analysis:* Transcripts were reviewed for accuracy & thematically analyzed
- 2 researchers developed master codebooks & were used to code all transcripts
- NVivo 10: QSR International software was used to organize codes
- Four researchers met to review codes, definitions & refine codebook to increase interrater reliability
  - Kappa coefficient: ~0.73
- Prevalent codes were categorized into major themes

Results

Objective 1: Characterize community pharmacy staff interactions with children & their parents

Objective 1: Observations

Table 1: Sample characteristics (N=97)

Characteristics	Mean - n(%)
Child gender- Male	46 (47%)
Child age (in years)	12.5 (2.9)
Child race	
White	84 (87%)
Black	2 (2%)
Other	3 (3%)
Child ethnicity- Hispanic	2 (2%)
Caregiver age (in years)	
<40	34 (35%)
41-50	48 (50%)
51-60	7 (7%)
>60	1 (1%)
Caregiver gender- Female	67 (69%)
Caregiver race- White	91 (94%)
Caregiver ethnicity- Hispanic	2 (2%)
Location of pick-up	
Urban	78 (80%)
Rural	19 (20%)

Table 2: Prescription indications (N=116)

Characteristics	n (%)
Medication type	
Acute (used <30 days)	45 (39%)
Chronic (used >30 days)*	71 (61%)
Indication	
Mental health condition	44 (38%)
Infection	31 (27%)
Asthma/allergy	17 (15%)
Other	15 (13%)
Contraception	9 (8%)
Chronic condition	
ADHD/ADD	28 (24%)
Depression	11 (9%)
Acne	7 (6%)
Asthma	6 (5%)
Diabetes	2 (2%)
Acute condition	
Infection	15 (13%)
Allergies	10 (9%)
Pain	4 (3%)
Nausea	2 (2%)

*Chronic medication definition: Used to treat chronic health conditions such as asthma, diabetes, ADHD, depression, & acne; Broadly classified according to common indication classes.

Objective 1: Observations

Table 3: Pharmacy visit characteristics (n=97)

Characteristics	Mean (SD) or n(%)
Time of pick-up*	
During school hours (9 am-3 pm)	44 (47%)
Not during school hours	49 (53%)
Day of pick-up	
Monday	23 (25%)
Tuesday	11 (12%)
Wednesday	18 (19%)
Thursday	16 (17%)
Friday	10 (11%)
Saturday	6 (6%)
Sunday	9 (10%)
Who picked up prescription	
Caregiver	66 (68%)
Child	3 (3%)
Both	28 (29%)

*Time of pick-up was missing for 4 families

Objective 1: Observations

Characteristics	Mean - n(%)
Who received counseling	
Caregiver	19 (20%)
Child	0
Neither	76 (78%)
Both	2 (2%)
Who counseled the family	
Pharmacist	11 (11%)
Technician	7 (7%)
Neither	76 (78%)
Both	3 (3%)
Number of questions child/caregiver asked	0.3 (0.7) Range 0-4

Objective 1: Observations

Table 4: Logistic regression predicting whether children or caregivers received counseling about their prescription (n=87)

Characteristics	B*	p**
Child age (in years)	-0.25	0.02
Child gender- Female	-0.79	0.19
Child race- non-White	-0.12	0.87
Prescription type- refill	0.27	0.69
Prescription for chronic condition	-0.07	0.92
Prescription picked up at urban pharmacy	-0.31	0.64

*B: regression coefficients
**p: p-value

Objectives 2 & 3: Demographics

- Pharmacy Staff
  - Most were female (69%), aged 30-49 (56%), with ≥ 5 years pharmacy experience (62%)

- Children & Parents
  - All non-Hispanic White & mostly female
    - Children – 60%; Parents – 95%
  - Most children aged 12-14 (45%)
    - 9th grade or above (50%)
  - Most parents aged 40-49 (47%) & married (84%)
    - Bachelor's degree or higher (58%) yearly income of ≥ $100,000 (56%)

Results

Objective 2: Describe pharmacy staff-reported barriers & facilitators influencing ability to provide medication counseling to children

Objective 2: Pharmacy Staff

Barriers	Facilitators
Child's absence during pick-up	Demonstrative/interactive technology
Distracted/uninterested child	Pharmacist demeanor/approach
Unconducive environment	Child-friendly educational materials
Age and limited attention span	Older children and comprehension
Child's comfort and personality	Private/welcoming consultation area
Parent preference/time constraints	Pharmacist training and experience
Pharmacist time constraints	Familiarity with child and caregiver

Objective 2: Prevalent Barriers

Barriers	Quotes
Child's absence during pick-up	"The child does not come to the pharmacy. 99% of the time they do not come to the pharmacy. So when do I get to see the child?" – *Pharmacist* "Their parents are either picking it up, or they're elsewhere. Rarely do they come with a parent." – *Technician*
Distracted/uninterested child	"But as for topics with medicine, they [children] – a lot of them tend to get distracted and not really seemed to be interested." – *Pharmacist* "We always try to talk to the child when we see them but typically there's very little interaction. The child does not want to talk to us." – *Pharmacist*
Unconducive environment	"At our counter there are so many distractions around whether it's in the pharmacy, around the counter, people, that the kids are so not focused on what's happening," – *Pharmacist* "I think our setting, in particular, isn't the best for the child. So I can imagine for a child, it would be hard to focus." – *Technician*

Objective 2: Prevalent Facilitators

Facilitators	Quotes
Demonstrative/interactive technology	"They're all using their electronics. So any type of electronic device that they could use to educate them would be helpful." – *Pharmacist* "Most kids, you can give them an iPhone or an iPad or a tablet of some sort and they're pretty user friendly and intuitive for them to engage in." – *Pharmacist*
Pharmacist demeanor/approach	"I think you need to talk on their level. You need to make sure that you're not throwing words out there that they're not gonna understand." – *Pharmacist* "I think just the language that you use has to be different and the way you approach a child vs. an adult has to definitely be different." – *Technician*
Child-friendly educational materials	"If we had pediatric-geared products or an app on their phone, or tablet, or whatever they have, I think that would make it a lot better." – *Pharmacist* "Something that would be helpful, maybe, for kids would be something that's more age appropriate." – *Technician*

Results

Objective 3: Child & parent perspectives of pediatric medication use experience & pharmacist-provided patient counseling

Objective 3: Children & Parents

Themes	Quotes
Child's knowledge, self-management, & medication use experiences	"I know what it's made and used for. I wouldn't mind if I knew more about it." – *Child* "I usually am used to it now. I just get up in the morning, eat breakfast, take the medicine, and then go to school." – *Child* "He knows what it's for but I don't think he knows anything more than that. He knows the general idea it's supposed to help him calm his nerves." – *Parent*
Essential medication information & sources	"It would be cool and interesting to see how other people react to it. Like test studies for how other people react to it. And sort of more about how it affects the body." – *Child* "She [physician] usually tells me about the medicine when she prescribes it. She doesn't really give me something to read but she sketches stuff out so I can see what's happening." – *Child* "Side effects are the number one. And then drug interactions. Food interactions with certain pills. But the number one is the side effects." – *Parent*

Objective 3: Children & Parents

Themes	Quotes
Child is frequently absent from the pharmacy	"No. I don't come to the pharmacy all that often." – *Child* "In the past—I've gone probably 10 times. Obviously, they've [parents] gone—because they usually do it when I'm at school." – *Child* "They're [children] not usually with me. I usually come when they're at school." – *Parent* "Rarely. Every once in a while he's with me but, even then, he really isn't paying attention to the pharmacist or anything." – *Parent*
Patient counseling needs & recommendations	"You could just talk to them [the pharmacist] and ask them all the questions you wanted, and they could give you all the information. They would ask you questions, like if you want to learn this or learn that". – *Child* "I don't think I would read that because there's always those pamphlets around and they never really look interesting, so I guess if it looked cool I might take a look at it" – *Child* "If you gave him paper and a pencil I think he would be like—he'd roll his eyes. It doesn't seem like work if it's on an iPad." – *Parent*

Objective 3: Children & Parents

Themes	Quotes
Use of interactive technologies to facilitate learning about medicines	"It's just easy to sit down and watch something, so if it was already playing, and you didn't have to ask anybody, I'd watch it." – *Child* "I would use the iPad because I think it's kind of interesting. It would be—instead of the sheet of paper, capture my mind more." – *Child* "He's very into technology and gaming and has an iPhone. And he would rather see something than read it. Something interactive, especially with him being a boy—active learning, I guess?" – *Parent*
Perceptions of community pharmacists	"I think if I have a question, and my mom would want me to call, or come talk, I don't think I would feel uncomfortable with that. I mean they all [the pharmacists] seem really nice." – *Child* "If I was introduced to him [the pharmacist] I'd be pretty comfortable with it." – *Child* "It does make me feel comfortable that we have a relationship and he knows the family, he knows a little bit about each of us and what's going on with us medically and personally. And that's probably the biggest thing." – *Parent*

Discussion

Objective 1: Characterize community pharmacy staff interactions with children & their parents

Objective 1: Observations

- Child's absence at pick-up
  - Children came with parents to pick up ~1/3 of the time
  - Pharmacists self-report children accompany parents <50% of the time[15-17]

- Low rates of pediatric medication counseling
  - Only 2% of children received direct counseling
  - Pharmacists report counseling parents more than children[16]

Objective 1: Observations

- Most prescriptions indicated for ADHD
  - Children & parents rarely ask providers about medications for chronic conditions[18]
    - Counseling is needed to prevent unsafe & inappropriate use
- Child age as predictor of counseling
  - Families of younger children more likely to receive counseling
  - Pharmacists have indicated they were more likely to provide counseling to older children[16]
    - Warrants future research on age-based differences

Discussion

Objectives 2 & 3: *Pharmacy staff, child & parent perspectives of pediatric medication use experience & pharmacist-provided patient counseling*

Discussion

- Child's frequent absence at pick-up
  - Barrier noted by most participants supports observational findings
  - Children are unfamiliar with pharmacists due to limited pharmacist-child interaction
    - Medication counseling is mostly directed only to parents[16]
- Pediatric medication self-management with minimal knowledge
  - Safety concern as adolescents have more responsibility, high nonadherence, have expressed concerns with transition to self-management[19,20]

Discussion

- Pharmacist-provided medication counseling
  - Physicians are 1^0 sources of medication information for children & parents
    - Comfortable & receptive to counseling by pharmacists
- Children want to communicate with healthcare professionals & be involved in decision-making[14]
    - Potential facilitator of pharmacist-child interaction: familiarity or introduction to pharmacist

Discussion

- Unconducive pharmacy environment
  - Lack of a private area negatively affects counseling
  - Pharmacy staff reported use of drive-thru limits communication
    - Providing counseling at drive-thru may adversely affect quality of patient care[21]
- Need for pharmacist training on approach
  - Pharmacists reported necessity of training on counseling children
  - A study of pharmacists' perspectives found that over 50% felt inadequately trained on child-specific issues[22]

Discussion

- Interactive & educational technologies
  - All participants noted as facilitator to help children learn about their medications
  - Current pharmacy educational materials are not designed for children[11,23]
  - Children prefer technology-based education
    - Use has improved their medication-taking technique[24-26]

Limitations

- Results may not be generalizable/representative
  - Limited period of observation of filling behaviors
  - Estimated child & parent's race/ethnicity, parent's age
  - No confirmation of medication indication as acute or chronic
  - Most participants were non-Hispanic White
  - Most parent participants reported yearly income of ≥ $100,000

Future Direction

Age-appropriate counseling needed for children & adolescents self-managing their chronic conditions

Develop training & continuing education for practicing pharmacists on pediatric counseling

Develop interactive & educational tools to facilitate pharmacist-child medication counseling

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Thank you!

Comments/Questions?

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