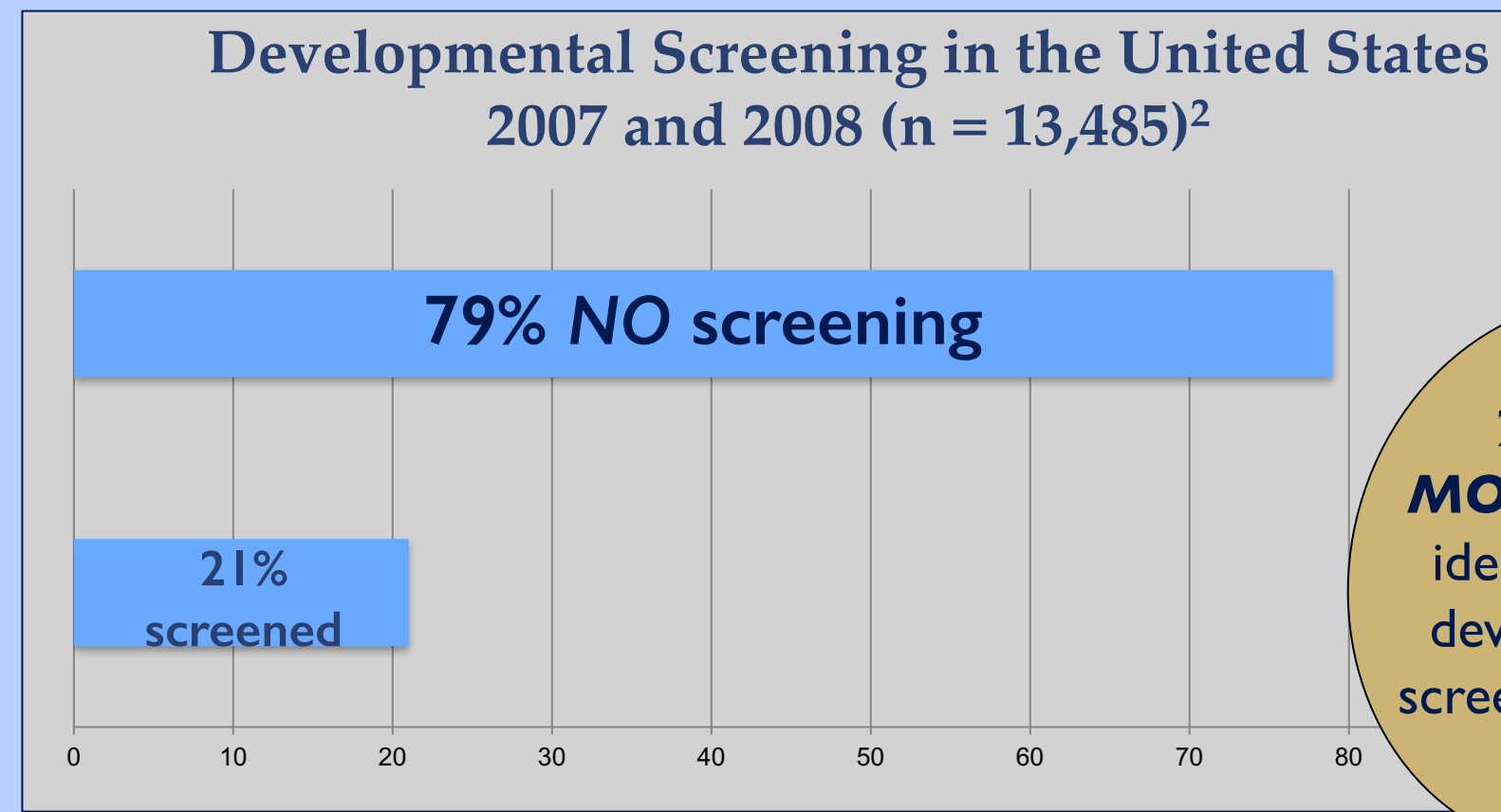# The Developmental Screening Behaviors, Skills, Facilitators and Constraints of Family Nurse Practitioners in Primary Care

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Background

American Academy of Pediatrics Developmental Screening Algorithm[1]
- Validated developmental screening instrument at well-child visits
- 9, 18, and 24 or 30 months of age; or whenever developmental concern raised by parent/provider

Developmental Screening in the United States 2007 and 2008 (n = 13,485)[2]

- **79% NO screening**
- **21% screened**

(bar chart, scale 0 to 80)

2 to 6x's MORE children identified with developmental screening tools[3-6]

Average age identification of developmental delays[7] = 6 yo

Early identification - Key to long-term outcomes[8-10]

Return on investment - $4 to $7 saved for every dollar spent on child development[11]
- 80% of funds received by general public
- < criminal activity; < disruption in school environment

Age appropriate development - 54% to 62% able to leave EI with age appropriate behaviors/developmental milestones[12]

Purpose of Study

To explore and describe the developmental screening behaviors, developmental screening skills, and environmental facilitators and constraints of primary care family nurse practitioners (FNPs) who care for children from birth to five years of age

Conceptual Framework

Fishbein's Integrative Model of Behavioral Prediction[13,14]
Skill and environmental constraints and facilitators lead to or impede performance of a behavior

Research Questions

- What are the developmental screening *BEHAVIORS* of primary care FNPs who care for children from birth to five years of age?
- What are the developmental screening *SKILLS* of primary care FNPs who care for children from birth to five years of age?
- What are the environmental *CONSTRAINTS* and *FACILITATORS* identified by primary care FNPs to performing developmental screening in children from birth to five years of age?

Review of Literature

22 quantitative 6 qualitative 4 mixed-methods studies

Heavy reliance on informal methods of screening

Facilitators: ethnically diverse patient population, public insurance, urban setting, practice-wide systems; easy to use tools

Constraints: Caucasian patient population, suburban setting, reimbursement, time, seasonal illnesses, staff turnover/lack of staff

Only 5 studies included RNs/NPs[15-19]

Method & Design

Qualitative descriptive design

Sample: Purposive sample of board certified FNPs. Minimum one-year, full-time, primary care experience; caring for pediatric patients from birth to five years of age in primary care settings

Recruitment: Electronic post on Facebook FNP Networking Forum; snowball effect; $25 gift card incentive after data was verified

Setting & Data Collection: HIPPA protected online environment: Virtual Care Works; individual semi-structured interviews and demographic data form via Survey Monkey®
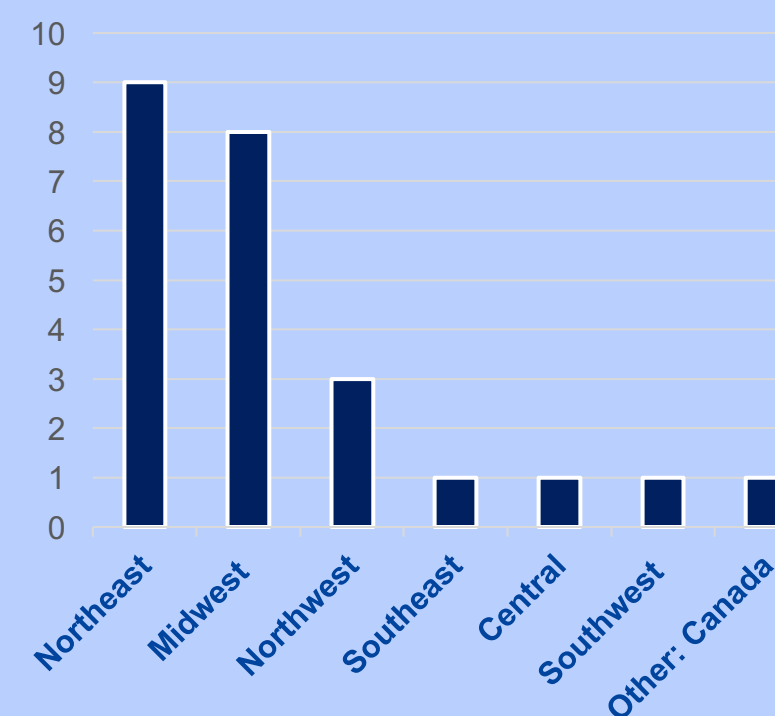
Data Management: HIPPA compliant server for online interviews; data/recordings downloaded to non-identifying, encrypted file on password protected computer, transcription service with a confidentiality agreement; ATLAS.ti® 7 for coding; data available to Villanova University IRB and 1 doctorally-prepared researcher for audit trail

Data Analysis: Elo & Kyngäs' Inductive Content Analysis[20]
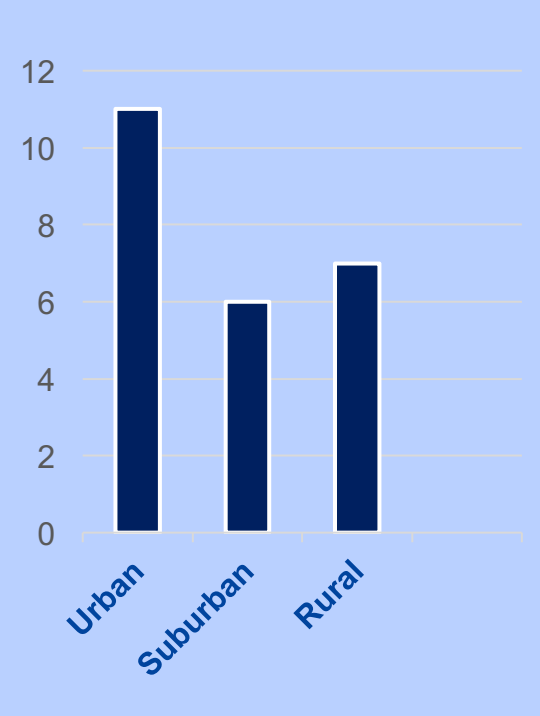- open coding, coding sheets, grouping, categorization, abstraction

Sample Demographics

	n	%
GENDER		
Male	0	0
Female	24	100
AGE		
21-25	1	4
26-30	3	13
31-35	8	33
36-40	6	25
41-45	1	4
46-50	3	13
51-55	1	4
> 55	1	4
PRACTICE TYPE		
Private	10	42
FQHC	10	42
Other	4	29
PRACTICE YRS as FNP		
1 to 5	15	62.5
6 to 10	4	17
11 to 15	3	12.5
16 to 20	1	4
< 20	1	4
CLINICAL NURSING EXPERIENCE PRIOR TO FNP EDUCATION		
Pediatrics	11	46
Medical Surgical	9	38
Adult critical care	3	13
Labor and delivery	3	13

Geographic Location *(bar chart: Northeast, Midwest, Northwest, Southeast, Central, Southwest, Other - Canada)*

Setting *(bar chart: Urban, Suburban, Rural)*

Well-Child Visits During One-Month Period *(bar chart: 1 to 5, 6 to 10, 11 to 15, 16 to 20, > 20)*
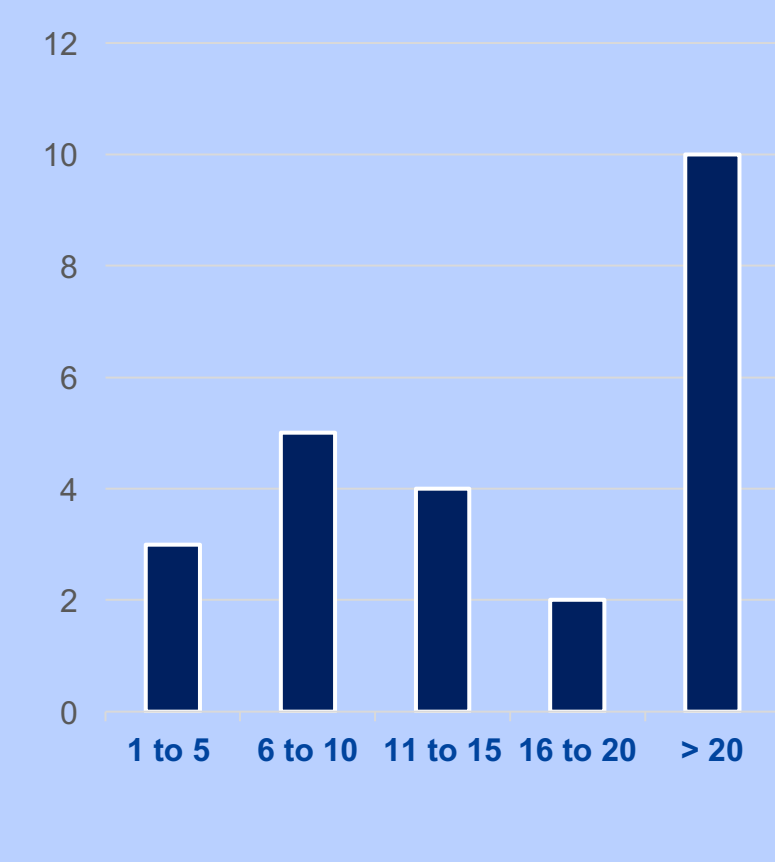
Time Allotted for Well-Child Visits *(bar chart: 15 minutes, 30 minutes, 45 minutes, 60 minutes, Other - 20 minutes)*
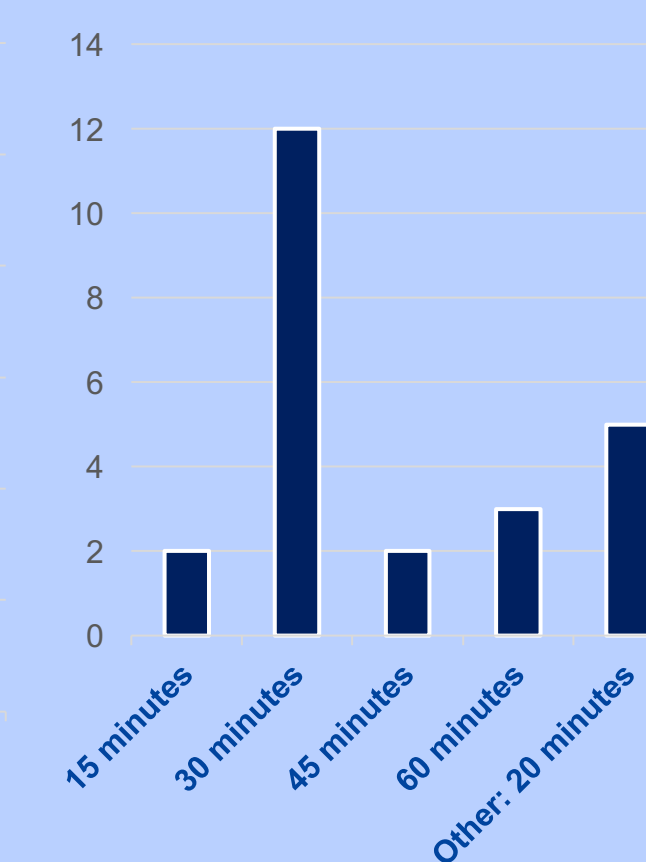
Pediatric Practicum Experience in FNP Program *(bar chart: 4 semesters, 3 semesters, 2 semesters, 1 semester, 0 semesters)*
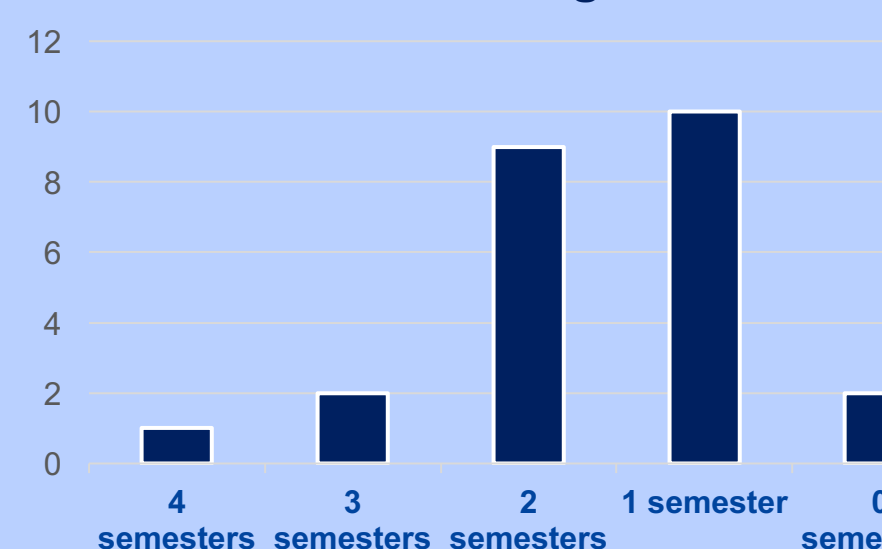
Time Spent on Developmental Assessment in FNP Program *(bar chart: A great amount, A fair amount, A little, None)*
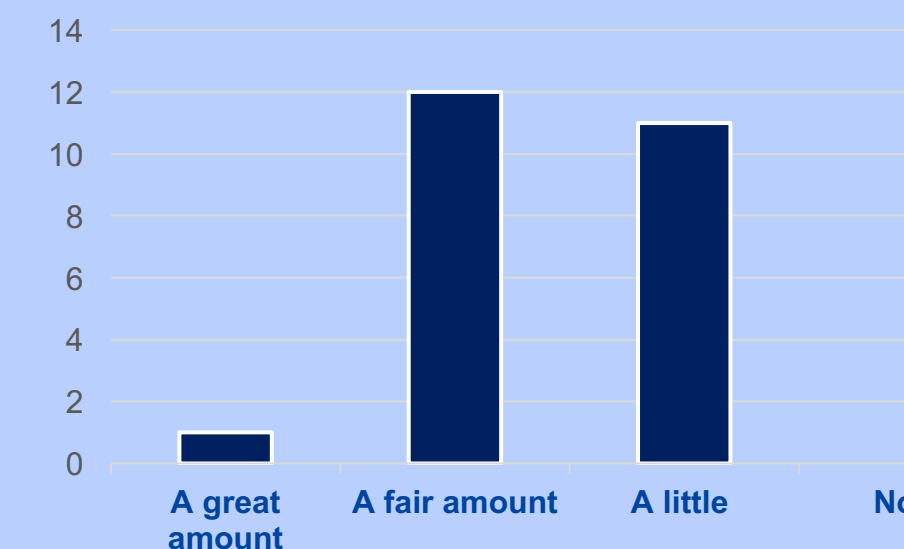
Confidence Delivering Well-Child Care *(bar chart: Very confident, Confident, Not very confident, Not confident)*
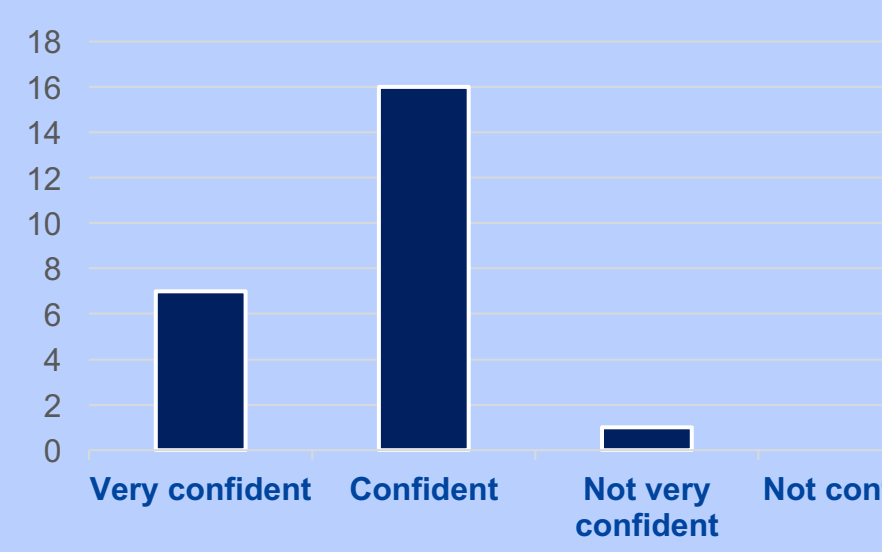
Quality of Well-Child Care *(bar chart: Very good, Good, Barely acceptable, Unacceptable)*
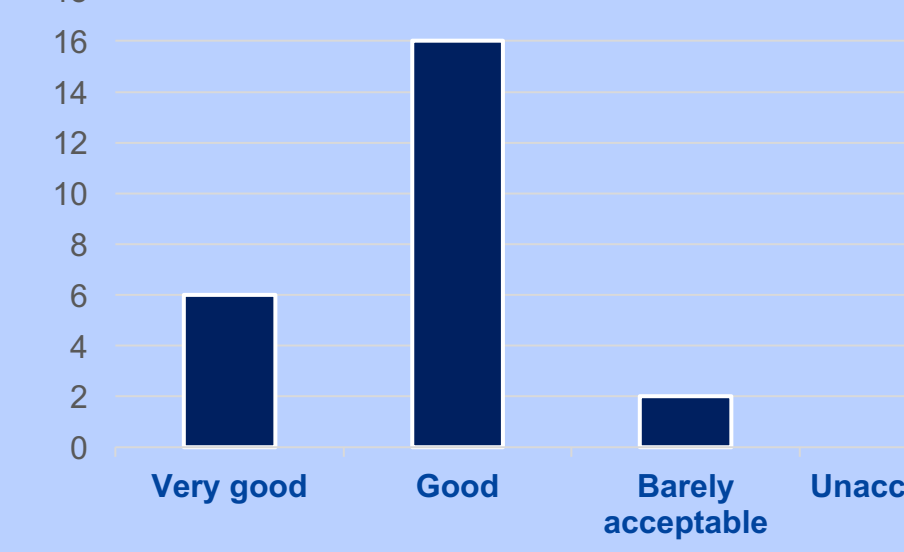
Findings

Themes and Sub-themes

Developmental screening behaviors during well-child visits

Informal screening methods
"There's different templates we can pull."
"Pretty much it is like a flow sheet checklist."
"I always carry around my little developmental flip book and ask them what developmental milestones they are meeting or not."

Selective methods of validated screening
"So right now in our practice we're only using those at specific ages – 9 and 18 months."
"I usually do Ages & Stages and the M-CHAT at 18 months."

Developmental screening behaviors when a concern was raised

Elicit information from parents
"Ask more questions to get an idea of exactly what is going on."
"I tend to ask more questions."

Thoughtful interaction with parents
"I bring up the concern without making them overly anxious or worried."
"Parents don't ever want to think anything is wrong with their child so you try to be very non-judgmental about how you present it."

Decision to refer
"I tend to make the referral because I believe in addressing developmental concerns sooner than later."
"We usually monitor for a couple of months."
"I guess it depends on the delay and how concerned I am. I don't know if I have a stepping stone. I use my gut to guide me."

Need for additional developmental screening skill

Familiarity with guidelines
"I couldn't quote it, so I'm not positive if I do or not?"
"I don't know off the top of my head."
"I'd have to look up what it says."

Recall of validated tools
"I honestly can't tell you the names of them."
"That's a really good question. I don't know."
"I can't think of what the names of them are."

Practicum experience
"Very minimal. It was very, very little and it wasn't in completion, it would be some portion of it."
"I know we focused on expected milestones for children from birth to early childhood, but I don't think we used any specific tool."
"I'm not sure we focused much on how to practically use them."

Uncertainty with assessment
"I guess being relatively new, I would say that I'm 100% confident in what I am asking."
"I think, just as a FNP it is really hard. If you don't see lots of peds, I see lots of peds for acute visits, but not developmental things."
"The hardest things I think for me especially when I was a newer clinicians was what can you wait on. What can you watch and wait?"

Factors that support developmental screening

EHR templates
"The EHR is super helpful because it doesn't let us forget."
"Sometimes when you're busy through the day, you might miss certain things you wish you touched on. So I think it's nice to have prompts there for me."
"For me, sometimes you say, which ones [questions] are for 18 months versus which are for 2 year old questions. I can say, 'Well, let me look,' so the templates are helpful to me in remembering."

Staff collaboration
"Basically, I delegate a lot to my medical assistant, so that makes it easier. The times when we fail to hit developmental screening at the visits - the formal questionnaire at the visits that I target, are the days when she is not there."
"Our MA's are wonderful and they ask a lot of questions too, and tell us, 'Hey look, the parents are concerned.'"
"Then I usually will either talk to my collaborating physician if I'm concerned, see if he has anything in particular that – just to make sure I'm on the right track basically is it something I should really be concerned about or not and then for the most part we refer out to additional resources."

Accessible referral system
"Specially developmental appointments have very long wait times to even get an appointment."
"If there is a long wait and you just can't get the services but you feel you really need and you just – you feel stuck, parent feels stuck, the kid is stuck, you know."

Factors that limit developmental screening

Variation in practitioner assessment
"We don't really have any practice guidelines at my setting."
"It's not with the same provider…so you lose that consistency."
"Each provider does things differently at my practice setting."

Lack of time
"We have so many patients. It's really challenging to get everything done on a daily basis."
"Time constraint and practices where – and this is true across - take this from pediatric and older adults and everywhere in between - practices that are focused on numbers and not on patients. I cannot be in a situation where I'm like, well, you have to fill this many visits of this type a day. It just feels unconscionable."

Parent resistance to concerns
"One of the challenges is the parents. A lot of them are in denial or they just think that you are making too much of it."
"The parents very much are in denial. That's the part that is like oh, how do I begin to realize."

Design of validated screening tools
"I don't think a parent quite understands the question."
"A lot of my families can't read it or can't understand it."
"It's really hard because we can't get a hold of them."

Limitations

Data analysis dependent upon perceptions and inclinations of the researcher
Purposive sampling
Socially desirable responding
Sample all female
58% of sample completed less than 20 well-child visits/month

Implications

Nursing Practice
- Initiatives to raise awareness
  - Dissemination of developmental screening recommendations
    - Bright Futures 2017/AAP recommendations
    - NAPNAP
    - AANP, *The Journal for Nurse Practitioners*
- Implementation of validated instruments that rely on parent response
  - ASQ and PEDS tools
- Standardization of developmental screening in practice
- Practice-wide implementation strategies
  - Time saving measures
  - Careful review of currently available developmental screening instruments
  - Customized EHR templates
  - Reminders, prompts
- Integration with validated developmental screening tools
  - Cost considerations
- Access to validated developmental screening tools
  - Billing & reimbursement

Nursing Education
- Further education for FNPs on developmental screening
  - Curriculum focused on informal developmental milestones
  - *Bright Futures* and AAP recommendations
- Review of validated developmental screening tools
  - Psychometric properties, administration time, appropriateness for primary care, language translation
- Hands-on experience
  - Clinical practicum or simulation
- Ask students about their practicum sites

Recommendations for Future Research

- Replication of study in sample of PNPs & comparison to FNPs
- Replication in sample of FNP preceptors
- Explore developmental screening content included in FNP programs
- Facilitators and constraints to developmental screening - sample of FNPs committed to using validated developmental screening tools
- FNP and parent interaction
- Referral process/system for developmental concerns
- FNP awareness of state specific guidelines/policies regarding referral for developmental concerns
- Challenges and costs of EHR integration with validated developmental screening tools
- EHR template validation
- EHR as a tracking system for children with developmental concerns

Conclusion

Developmental screening behaviors
- Mainly informal methods of developmental assessment

Developmental screening skill
- Need for additional education on developmental screening
- Need for practice with developmental screening tools

Facilitators
- EHR templates and staff collaboration

Constraints
- Variation in practice, lack of time, parent resistance, referral challenges, and the design of validated developmental screening tools