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Does Age Influence Knowledge and Attitudes about Intrauterine Devices?

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Background

- Intrauterine devices (IUDs) are considered “top tier” birth control, including for adolescent and nulliparous women¹.
- Usage in the U.S. has increased² but lags far behind that of other similar countries³.
- Barriers to IUD usage include patient attitudes and lack of education, both of which fuel persistent misinformation and lack of awareness⁴⁻⁷.
- Disparities in contraceptive knowledge by age and race⁸ and in contraceptive use by race and ethnicity⁹ have been previously documented.
- There have been no published studies to date looking at the attitudes patients have about IUDs depending on age.

Objective

- Primary objective: Are there differences in attitudes and beliefs about IUDs based on age?
- We hypothesized that older women may be more familiar with the negative outcomes of earlier models of the IUD¹⁰ and therefore may hold more negative attitudes toward IUDs.

Materials and Methods

- We investigated women’s attitudes through a paper survey completed privately and anonymously.
- Recruitment occurred by approaching all women in the Thomas Jefferson OB-GYN outpatient office from June 13 – July 18, 2016.
- Exclusion criteria:
 - No English
 - <14 years old
 - Previously completed
 - Declined
- Survey Questions:
 - Sexual, contraceptive, and obstetric history
 - Socioeconomic questions
 - Familiarity with and feelings about IUD
 - Statements to agree/disagree with on a 5 point Likert scale, gauging opinions and accuracy of knowledge about IUD (see Figure 1)
- Statistics: we performed an exploratory bi-variable analysis using t tests and chi square testing to determine which of the aspects of IUD knowledge or attitude differed by participant age.

Figure 1 (below): Example Likert scale statements

The IUD can be felt during sex.
IUDs cause weight gain.
The IUD can only be used by older women.
The IUD may move around during activity.
IUD insertion requires surgery.
The IUD is banned in the U.S.
The IUD is only for women who have children.
I understand how the IUD prevents pregnancy.
I know how the IUD is inserted.
I know enough to decide about getting an IUD.
The IUD will affect my ability to get pregnant.
I am alarmed or afraid at the idea of the IUD.
The IUD is an effective way to prevent pregnancy.
IUDs can be removed early.
Hormonal birth control is safe and effective.

Results and Discussion

- Response Rate: 38% (521 surveys/1366 individual women approached)
- Overall IUD usage in sample:
 - 25% of sample had used an IUD (110/445), and 66% of those had a positive experience (73/110)
 - 43% felt IUD was reliable (181/421)
 - Mean self-reported IUD knowledge: 5.5 (on 1-10 scale)

Figure 2 (below): Demographics of Respondents

Age	n (%)	Race	n (%)	Education Level	n (%)
14-20	26 (5%)	White	231 (46%)	Grade school/Some H.S.	17 (4%)
21-34	296 (58%)	Black	212 (42%)	H.S. Diploma/GED	99 (19%)
35-50	125 (25%)	Asian	35 (7%)	Any College	279 (54%)
>50	61 (12%)	Other	26 (5%)	Any Graduate School	120 (24%)

Insurance	n (%)	Prior Pregnancy	n (%)	Children?	n (%)
Private	298 (59%)	Yes	382 (76%)	Yes	219 (43%)
Medicaid	102 (20%)	No	120 (24%)	No	285 (57%)
None	3 (1%)				
Other/Don't know	99 (20%)				

Figure 3 (below): Before accounting for confounding factors, five survey outcomes, including two Likert scale statements, appeared to differ among age groups with statistical significance.

Outcome	14-20 (n=26)	21-34 (n=296)	34-50 (n=125)	>50 (n=61)	p-value
Self-rated knowledge 1-10 Mean (SD)	3.4 (+/- 2.59)	5.6 (+/- 2.98)	5.3 (+/- 3.05)	6.0 (+/- 3.06)	.024
Ever used IUD Yes – n (%)	Y – 0 (0%)	Y – 74 (29%)	Y – 21 (18%)	Y – 12 (24%)	.009
IUD reliability (+) – Positive n (%)	(+) – 3 (20%)	(+) – 108 (44%)	(+) – 45 (41%)	(+) – 20 (44%)	.025
“IUD insertion requires surgery.” D – Disagree n (%)	D – 8 (53%)	D – 174 (70%)	D – 70 (67%)	D – 35 (80%)	.046
“Hormonal birth control is safe and effective.” A – Agree n (%)	A – 2 (13%)	A – 123 (52%)	A – 52 (47%)	A – 16 (37%)	.012

- We then performed regression analysis to assess for confounding by other demographic factors using analysis of variance, logistic regression, or ordinal logistic regression as appropriate for continuous, 2 level, and 3 level outcomes, respectively.

Results and Discussion

Figure 4 (below): Differences between age groups did not retain statistical significance when accounting for confounding factors, such as education level, gravidity, and parity, with the one exception that women aged 21-34 were significantly more likely than their younger counterparts to agree with the statement “Hormonal birth control is safe and effective.”

Outcome	14-20	21-34	34-50	>50
Self-rated knowledge 1-10 Mean; (CI)	3.4 (reference)	5.6 (+2.2); (-.36 - 3.13)	5.3 (+1.9); (-1.13 - 2.63)	6.0 (+2.6); (-.92-3.21)
IUD reliability OR; (CI)	(reference)	.257; (.05 – 1.29)	.311; CI (.06 – 1.65)	.328; (.06 – 1.89)
“IUD insertion requires surgery.” OR; (CI)	(reference)	.494; (.15 – 1.63)	.923; (.26 – 3.31)	.474; (.10 – 2.15)
“Hormonal birth control is safe and effective.” OR; (CI)	(reference)	3.646; (1.27 – 10.46)	2.511; (.82 – 7.68)	1.005; (.82 – 7.68)

Conclusions and Next Steps

- We found no significant differences in what women think or know about IUDs based on age.
- Study limitations include voluntary nature of the survey and use of the Jefferson OB-GYN waiting area as representative of the population at large (the question of external validity).
- If attitudes about IUDs differ, perhaps specific contraception counseling interventions can be created to target these beliefs.
- Areas for further research within survey data include investigations into several possibly significant differences between black and white respondents, as well as survey results related to provider trust, sources of birth control information, and health literacy.

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