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Full Length Research Paper

Delivery and Utilisation of Injectable Contraceptive Services in rural Nigeria: Learning from the Perspectives of Patent Medicine Vendors and Women of Reproductive Age

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ABSTRACT

Patent Medicine Vendors (PMVs) are major providers of reproductive health services in Nigeria. Although several studies have explored the role of PMVs in the provision of contraceptive services in general, few have specifically assessed their contribution to the delivery ofinjectable contraceptive. Little information is also available on the experiences of Nigerian women who use injectable contraceptives provided by PMV in rural medically underserved communities. A descriptive cross-sectional survey was conducted in four rural Local Government Areas (LGAs) in Oyo State, Nigeria. Trained interviewers conducted face-to-face interviews among all the 396 PMVs identified using the snow-balling approach. The PMVs were interviewed using a 52- item validated questionnaire that elicited information on their demographics, knowledge and delivery of injectable contraceptives. Face-to-face interviews, using a 35-item questionnaire were also conducted among 393 previous or current users of injectable contraceptives who were randomly selected from their households. Information collected from the women included personal characteristics, use of injectable contraceptives, and sources of supply. Majority of the PMVs were females (84.8%) and 29.3% had previously worked in a health facility. Almost all (94.6%) the PMVs were shop owners. Majority (89.1%) of the PMV were aware of injectable contraceptives and 39.0% had ever received any training on the provision of family planning services. Y*et al*most all (95.9%) reported providing at least some type of contraceptive services. About 13% of the PMVs had sold injectables. Besides selling injectable contraceptives, 14.9% of the PMVs reported administering injectables and 43.9% reported referring clients to a formal health facility for this contraceptive. Slightly over half (51.9%) of the women were in the 30-39-year age group. Depo-Provera was the most popular injectable used, accounting for 82.3% of previous use and 77.6% of current use. Among previous users, 68.9% had received services from a health facility, 19.6% from a PMV, and 11.5% from a community health worker. Current users obtained their services from PMVs (22.6%), health facilities (66.0%), and community health workers (11.4%). Although pharmacy laws in Nigeria do not permit PMVs to offer injectable contraceptives, PMVs reported sale and administration of injectable contraceptives in response to demand from clients. Interventions and policy actions are needed to ensure that PMVs are a safe contact for clients with family planning needs.

Key words: Patent medicine vendors, injectable contraceptives, delivery of reproductive health services, Nigeria

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INTRODUCTION

Nigeria, Africa's most populous country, has several poor reproductive health indicators including low contraceptive prevalence rate. Despite sustained interventions to promote family planning during the last two decades, contraceptives remain underutilised in Nigeria (National Population Commission [NPC] [Nigeria] and ICF International, 2014; Adebowale, Fagbamigbe, Bamgboye, 2011; Olukoya, 1987). Results from the most recent National Demographic Health Survey [NDHS] (2013) showed that only 10.0% of married women used modern contraceptives including injectables, pills, condoms and intra-uterine contraceptive devices (NPC [Nigeria] and ICF International, 2014).

The bulk (60.0%) of contraceptive services is provided by private sources including hospitals, clinics, pharmacies and Patent Medicine (PM) shops (NPC [Nigeria] and ICF International, 2014; Fayemi, Oduola, Ogbuji, Osinowo, Oyewo and Osiberu, 2010; NPC [Nigeria] and ICF Macro, 2009; Ajuwon, Okuribido, Sadiq and Delano, 2006). Among the private sources of contraceptive services in the country, the PMVs are the

most popular (NPC [Nigeria] and ICF International, 2014). The PM shops are informal businesses owned by non-pharmacists. Patent Medicine Vendors (PMVs) Are licensed to sell patent or proprietary drugs, non-prescriptive contraceptive including condoms, and Over The Counter drugs [OTC] that Nigerian regulatory authorities, such as Pharmacy Council of Nigeria, consider safe for unsupervised public use, as long as they are sold in their original manufacturer packages (Brieger, Unwin, Greer and Meek, 2005).

Despite this restriction, several studies confirm that PMVs in Nigeria not only stock and sell controlled drugs including antibiotics and steroids, but also perform procedures that are outside the scope of their license (Okonkwo and Okonkwo, 2010; Ajayi, 2009; Oye-Adeniran, Adewole, Umoh, Oladokun, Gbadegesin, Odeyemi and Ekanem, 2005). For example, findings from the study by Oye-Adeniran and colleagues show that most women reportedly obtained injectable contraceptives from PMV (Oye-Adeniran, *et al*., 2005). Another recent survey showed that 10% of the PMVs reportedly stocked injectable contraceptives and many of them provided a range of contraceptives including male and female condoms, emergency contraceptives pills, oral pills and intra-uterine contraceptive devices (Ajayi, 2009).

The PMVs are a popular source of health care including contraceptive services in Nigeria for three reasons. First, PM shops are ubiquitous sources of affordable health care with many shops having a secluded area for private consultations (Stanback, Lebetkin, Orr and Malarcher, 2015). As a result, they serve as the first port of call for many citizens seeking inexpensive health services. Second, the PMVs are frontline health service providers who carry out multiple tasks that meet the health care needs of clients including consultation, counselling, prescription and dispensing of drugs (Barnes, Chandani and Feeley, 2008; Brieger, Osamor, Salami, Oladepo and Otusanya, 2004). By combining the work of the doctor, the nurse and the pharmacist, the PMVs have become more functional than any single one of these (Brieger, Unwin, Greer and Meek, 2005). Third, many Nigerians prefer to visit PM shops for health care services because the shops are always stocked with drugs, are open for long hours including weekends, offer more personable social interaction and do not charge separate fees for consultation (Brugha and Zwi, 2002; Adetunji, 1991). The demand for PMV services are even higher in rural areas where majority of citizens live; unfortunately, these settings are medically under-served due to chronic shortage of qualified health staff, drugs and other supplies (Oye-Adeniran, *et al*., 2005; Ajayi, 2009).

Many studies have assessed the role of PMVs in the delivery of contraceptives including the extent to which PMV in urban areas complied with the guidelines developed by the Nigerian Federal Ministry of Health for providing non-prescriptive contraceptives (Okonkwo and Okonkwo, 2010; Ajayi, 2009; Ajuwon *et al*., 2006; Brieger *et al*., 2005; Oye-Adeniran *et al*., 2005). Yet, several gaps exist in knowledge and understanding of the specific contributions of PMVs in the delivery of injectable contraceptives. For example, none of the existing studies assessed PMVs' current practices in providing injectable contraceptives. There is need to investigate this issue because injectables are the most popular type of contraceptives in Nigeria (NPC [Nigeria] and ICF International, 2014). Furthermore, existing studies have assessed use of injectable service from the perspectives of the users i.e. sexually active women (Oye-Adeniran *et al*., 2005). Therefore, it is important to investigate the delivery of injectable contraceptive from the perspective of the PMV who are one of the main providers of this type of contraceptives. Finally, we are not aware of published studies that assessed Nigerian women's experience with use of injectable contraceptives. This paper presents results of a study which examined injectable contraceptive services from two perspectives: the perspective of PMVs who are the main providers in rural communities and the perspectives of women who are their clients.

METHODS

The study was a descriptive cross-sectional survey conducted in rural LGAs between June and July, 2012. The protocol for the study was approved by both the Joint University of Ibadan/University College Hospital Ethics Review Committee in Nigeria and the Ethics Review Committee of the World Health Organization (WHO) in Geneva, Switzerland.

Study Sites: The study sites are four of the rural LGAs adjoining Ibadan metropolis namely Akinyele, Egbeda, Ido and Ona-Are in Oyo State, South-west, Nigeria. The population of each of these LGAs is approximately 300,000. Residents are mainly Yoruba, the major ethnic group in South-western Nigeria. Subsistence farming is the mainstay of the local economy in these communities. Each of the LGA has government-owned health facilities that provide clients with some reproductive health services including contraceptives. However, like most rural communities, these facilities experience chronic shortage of staff and supplies. By contrast, many PM shops in these areas have well-stocked drugs including contraceptives and other medical supplies. Being private business operators, the PMV are readily available in their shops and provide client-friendly services that meet the needs of citizens who practice self-care. Many of the

PMVs in these areas belong to the local National Association of Patent and Proprietary Medicine Dealers Associations (NAPPMED) which serve as mediator between their members and local, state and federal government drug regulatory and law enforcement agencies including the police that typically harass and extort money from PMV (Oshiname and Brieger, 1992.

Study Population: Two groups participated in the study. The first were PMVs who own shops in the study sites. Most PMVs learn drug selling and dispensing through apprenticeship under a holder of a license. Others may be retired or serving trained health workers such as Pharmacy Assistants, Nurses, Community Health Extension Workers (CHEWs) and civil servants who manage patent medicine business as additional source of income. The Ministry of Health is the agency of government that is responsible for providing a license to open a PM shop. The second group of study participants were women who were either previous or current users of injectable contraceptives.

Measures: Two questionnaires were used for data collection. The first, a 52-item validated questionnaire was used to collect information from the PMVs. The questionnaire consisted of three sections namely demographic characteristics, knowledge of contraceptives, delivery of injectable contraceptive services including sale, referral, counselling and administration of injectables. The questions on knowledge relates to types of contraceptives known, parts of the body appropriate for contraceptive injection and procedures involved in administering injection. This questionnaire was an adaptation of questions from previous studies among PMVs (Ajayi, 2009). The second questionnaire consisted of 35 items on women's demographic profile, previous and past experience of use of injectable contraceptives and sources of supply of the product. The questions in the two questionnaires were initially drawn in English and later translated into Yoruba, the language widely spoken in the study sites. Prior to their administration, the draft questionnaires were field-tested for clarity and comprehension among a group of PMVs and women in Afijio, LGA in Oyo state with comparable population and economic activities as the study sites.

Twelve interviewers conducted face-to-face interviews with PMVs and the women. Face-to-face interview method was used because of the assumption that many of the study participants would be low literate persons. A major criterion for recruiting the interviewers was ability to read and write in Yoruba fluently. The contents of the training are nature and types of contraceptives, interpersonal and interview skills, ethical issues including informed consent.

Procedures for data collection

Interview for PMVs: The research team adopted three procedures for the recruitment of PMVs. First, we contacted the leaders of NAPPMED in each of the LGA to introduce the project, discuss its objectives and solicit their support and approval. The team later obtained information on locations of the shops of the members of NAPPMED in each LGA. Secondly, because of the assumption that not all PMVs may belong to NAPPMED, the team conducted an enumeration of additional PMV shops in the areas. Trained interviewers identified the shops and all PMVs found in shops on the day of visit were invited to participate. After identification of a shop, interviewers used a snowball approach to identify other PM shops in each LGA. Written informed consent was obtained from each PMV after explanation was provided that the data will be used for research, that participation in it was voluntary and that data collected will be kept confidential. The interviews were conducted in a private place inside the shops. All 396 PMV invited to participate in the study agreed to do so.

Interview of current and previous users of injectable contraceptives: Women who were previous or current users of injectable contraceptives were recruited from the households proximally situated in areas where PM shops are located. When trained interviewers got into any house a census of adult female household members was conducted. This was done by asking any adult found during the time of visit for the number of women of reproductive age living in the house. Each woman was then approached and screened for eligibility for participation in the study. Interviewers asked each woman whether or not she had ever used any contraceptives. Among those who provided affirmative answers, interviewers further asked to confirm if they had used an injectable contraceptive. Only those who had ever used or were current users of injectable contraceptives were then invited for an interview. Eligible women were interviewed in a private location within the house. In all a total of 393 women were interviewed. Two supervisors were responsible for the handling of logistic issues, ensuring data quality control and provision of supportive supervision. They were also responsible for reviewing each copy of the administered questionnaire and verifying accuracy of recording of responses provided by respondents in the field.

Data Analysis: Both closed and open-ended questions were coded and the data were fed into the computer using the Statistical Package for Social Sciences software

version 15. The data were analysed using descriptive statistics and the results are presented in tables The knowledge component of the study was assessed using an 18-point Knowledge Score. In this scale, a correct response attracted one mark.

RESULTS

Demographic characteristics of PMVs

A large majority of the PMVs were females (84.8%), 82.3% were married and their mean age was 33.3 ± 8.3 years (Table 1). Most respondents (68.9%) were high school certificate holders; 24.5% had post-secondary qualifications, 6.1% primary and 1% had no formal education (not shown on table). More than a quarter (29.3%) had worked in a hospital setting before; out of these, 68.1% had worked as Nurse/Midwives. Virtually all (94.6%) of the respondents were shop owners who acquired their competency as PMVs through apprenticeship (86.4%). The overall age of practice as PMV was 8.2 ± 6.4 years.

Table 1:
Socio-demographic characteristics of PMVs

Variables	LGA				Total (%) N=396
	Akinyele (n=96)	**Egbeda** (n=99)	**Ido** (n=102)	**Ona-Ara** (n=99)	
Marital status					
Single	16.7	12.1	20.6	17.2	16.7
Married	81.3	87.9	79.4	80.8	82.3
Divorced	1.0	0	0	2.0	0.8
Widowed	1.0	0	0	0	0.3
Age (n=383)					
n	93	94	99	97	Overall Mean Age
SD	9.4	8.5	7.9	6.9	= 33.4 ± 8.3
Mean Age	34.4	34.2	34.2	30.8	
Mean years of experience as a PMV (n=385)					
n	96	98	97	94	Mean years of
SD	9.4	6.98	6.4	5.6	experience as
Mean Yrs exp	8.3	8.3	8.2	7.9	PMV 8.2 ± 6.5
Had worked in a health facility					
Yes	33.3	34.3	30.4	19.2	29.3
No	66.7	65.7	69.6	80.8	70.7
Professional background	**(n=22)**	**(n=21)**	**(n=20)**	**(n=9)**	(N=116)
1. Pharmacist	3.1	0.0	3.2	3.2	2.6
2. CHEW	3.1	5.9	3.2	10.5	5.2
3. CHW	3.1	0.0	0.0	0.0	0.9
4. Nurse/Midwife	65.6	70.6	74.2	57.9	68.1
5. Pharmacy Technician	0.0	0.0	3.2	0.0	0.9
6. Other	25.0	23.5	16.1	26.3	22.4

(CHEW – Community Extension Health Worker; CHW: Community Health Worker; Tech: Technician)

Knowledge of contraceptives: All the respondents have heard about contraceptives and 89.1% were aware of injectable contraceptives (Table 2). The male condom, Depo-Provera (DMPA), monthly pills, in this order, were the most commonly known contraceptives. Majority of the respondents (94.5%) reported that contraceptives were used for child spacing, prevention of unwanted pregnancy (91.2%) and prevention of sexually transmitted diseases (56.8%) (Not shown on Table). Most (73.2%) indicated that the buttock was the most suitable part of the body for administering the injectable contraceptive. The overall mean knowledge score of PMVs was 11.8 out of 18.

Provision of contraceptive services: Only 39.0% of the respondents had ever received any formal training on how to provide contraceptive services. Yet, virtually all the respondents (95.9%) had ever provided contraceptives services including sale of contraceptives (Table 3). Sale of male condom (99.0%) topped the list of contraceptives provided by respondents followed by monthly (75.2%) and emergency pills (59.8%).

Sale and administration of injectables: Overall, 12.6% of PMVs said they had sold injectables (Table 4). In addition to selling injectable contraceptives, 14.9% of the PMVs reported administering injectables and 43.9%

reported referring their clients to other facilities for contraceptive service. Other results not shown on the Table are that among the 50 PMVs who had sold injectable contraceptives, most (88%) were women. More than half (58%) had experience working in a health facility before setting up their patent medicine businesses. Among the 59 PMVs who had actually administered injections, almost all (94.9%) were women, and the majority (74.6%) had worked in a health facility at some point.

To help ensure confidential services, 10.2% of the PMVs who had administered injections said they offer counselling, 50.8% said they have private rooms, and 18.6% said they keep records of this service. PMVs explained that their clients accessed injectable services in three ways: some purchase the product and receive the injection from the same PMV at the shop, some purchase the product from one PMV and have it administered by a different PMV, and others purchase the product and get the PMV to administer the product in the client's home.

Table 2:
PMV's Knowledge about contraceptives

Knowledge item	AKL n=96	EGD n=99	IDO n=102	ONA n=99	Total n=396
Awareness of injectable contraceptives					
Yes	99.0	98.0	82.4	77.8	89.1
No	1.0	2.0	17.6	22.2	10.9
Types of contraceptives known ††					
Male condom	97.9	97.0	100	97.0	97.5
Female condom	55.2	65.7	59.8	45.5	56.6
Pills	63.5	73.7	76.5	74.7	72.2
Pills – Postinor 2	67.7	68.7	70.6	74.7	70.5
Pills – Overette	46.9	35.4	35.3	39.4	39.1
Spermicide	11.5	14.5	5.9	9.1	10.1
IUCD	50.0	61.6	61.8	45.5	54.8
Diaphragm	13.5	17.2	15.7	19.2	16.4
Depo-Provera (DMPA)	72.9	84.8	86.3	81.8	81.6
Norigynon (Injectable)	24.0	29.3	17.6	18.2	22.2
Noristerat (Injectable)	54.2	61.6	57.8	60.6	58.6
Mesigyna	15.6	4.0	3.9	5.1	7.1
Cyclofem	14.6	5.1	5.9	7.1	8.1
Part of body most suitable for injectable contraceptives(n=377)					
Buttocks	65.6	71.7	81.9	73.6	73.2
Other parts of the body	28.0	16.2	10.6	16.5	17.8
Don't know	6.5	12.1	7.4	9.9	9.0
Steps that should be followed sequentially when injectable is to be administered:					
Check the label carefully	6.5	6.4	2.4	2.3	12
Rock the bottle	33.8	1.3	4.9	4.5	31
Wash hand or use glove	9.1	2.6	14.6	2.3	16
Clean the area	24.7	35.9	56.1	45.5	90
Open injection	16.9	29.5	36.6	20.5	60
Give/administer injections	44.2	69.2	73.2	54.5	142
Overall mean contraceptive knowledge score (out of 18)	11.7	11.9	12.9	11.4	11.8

†† Multiple responses
N.B: AKL=Akinyele LGA; EGB= Egbeda LGA; IDO= Ido LGA; ONA= Ona Ara LGA

Table 3:
Delivery of contraceptive service

Variable	AKL n=96	EGD n=99	IDO n=102	ONA n=99	Total (n=396)
Ever attended any training on in delivery of contraceptive services (n=385)					
Yes	49.0	48.0	28.7	30.0	39.0
No	51.0	52.0	71.3	70.0	61.0
Had provided contraceptives service					
Yes	92.7	95.9	96.9	98.9	95.9
No	7.3	4.1	3.1	1.1	4.1
Types of family planning provided					
Counselling on family planning	58.7	61.6	75.4	76.7	66.2
Sale of contraceptive	65.2	68.7	98.7	98.7	81.0
Referral	89.4	77.8	91.7	94.8	88.4
Treatment of STI	14.8	15.3	14.8	29.4	21.1
Insertion of IUCD	7.7	4.0	4.2	5.9	5.5
Types of contraceptives provided					
Male condom	100	97.0	100	100	99.0
Female condom	17.7	16. 3	34.3	32.3	25.1
Emergency pills	41.3	38.8	82.4	76.9	59.8
Monthly pills	53.6	60.0	97.2	90.3	75.2

Table 4:
PMV report of sale, administration, and referral of clients seeking injectable contraceptive services

Injectable contraceptive service	LGA				Total % (N=396)
	AKL n=96	EGB n=99	IDO n=102	ONA n=99	
Sale	11.5	17.2	10.8	11.1	12.6
Administration	12.5	19.2	14.7	13.1	14.9
Referral	59.4	52.5	32.4	32.3	43.9

Table 5:
Demographic characteristics of injectable contraceptive users

Variable	LGA				Total % N=393
	AKL n =97	**EGB n=102**	**IDO n= 96**	**ONA n = 98**	
Age (years)					
< 30	14.4	11.8	9.4	16.3	13.0
30 – 39	43.3	48.0	58.3	58.3	51.9
40 – 49	37.1	32.4	22.9	22.4	28.8
50 and above	5.2	7.8	9.4	3.1	6.4
Marital status					
Single	1.0	1.0	1.0	1.0	1.0
Married	99.0	94.1	97.9	97.0	97.0
Divorced	0	1.0	s0	1.0	0.5
Widowed	0	3.9	1.0	1.0	1.5
Type of marriage					
Monogamy	82.3	66.7	76.6	72.4	74.5
Polygyny	17.7	33.3	23.2	27.6	25.5
Education qualification					
None	2.1	2.0	5.2	5.0	3.5
Primary School	36.1	28.4	14.6	28.7	27.0
WASC/GCE	49.5	52.9	63.5	59.4	56.3
OND/Diploma/ Nursing	8.2	11.8	12.5	5.9	9.6
HND/First Degree	4.1	4.9	4.2	1.0	3.5
Religion					
Christianity	48.5	59.8	79.2	36.6	55.8
Islam	51.5	40.2	20.8	63.4	44.2

Demographic demographics of injectable contraceptive users: Slightly more than half (51.9%) of the women interviewed were in the 30-39-year age group. Almost all of them were married with the majority being in monogamous unions. Respondents' educational qualifications showed that 56.3% of the respondents had a high school certificate (locally called WASC/GCE) and only 3.5% had no formal education (Table 5).

Injectable contraceptive user practices: Table 6 presents information on the use of injectables among the injectable contraceptive users. The DMPA was the most commonly used injectable contraceptive accounting for 82.3% of previous use and 77.6% of current use. Other injectable was Noristerat (16.4%).

Duration of current use varied, with the largest proportion of women (60.5%) having used injectable contraceptives for the past 1–5 years.

Women's experiences with use and source of injectables

A substantial proportion of the women interviewed (64.1%) had experienced side effects of injectable contraceptives. The most common side effects were irregular menstrual flow (92.5%), weight gain (25.5%), increased menses (15.4%), headaches (14.9%), and breast tenderness (14.1%). Among previous users, 68.9% had received services from a health facility, 19.6% from a PMV, and 11.5% from a community health worker. Data were similar among current users, who obtained their services from PMVs (22.6%), health facilities (66.0%), and community health workers (11.4%) (Table 6). Among the women who had received any type of injectable contraceptive service from PMVs, 67.0% rated the services as "good," 20.9% rated them as "average," and 12.1% rated them as "poor." (Data not shown on Table).

Table 6:
Women's previous and current use of injectable contraceptives

Variable	Local Government Area				Total (N = 393) %
	Akinyele (n = 97) %	**Egbeda (n = 102) %**	**Ido (n = 96) %**	**Ona-Ara (n = 98) %**	
Type of injectable contraceptive ever used					
Norigynon	1.0	2.0	1.0	1.0	1.3
Noristerat	13.4	20.6	12.5	18.8	16.4
Depo-Provera	85.6	77.5	86.5	80.2	82.3
Current use of injectable					
Yes	32.0	30.4	33.3	30.7	31.6
No	68.0	69.6	66.7	69.3	68.4
Type of injectable in current use	*(n=31)*	*(n=31)*	*(n=32)*	*(n=31)*	*(N=125)*
Noristerat	19.4	25.8	15.5	29.0	22.4
Depo-Provera	80.6	74.2	84.4	71.0	77.6
Duration of current use (years)*					
<1	20.0	16.1	12.5	19.4	16.9
1–5	70.0	48.4	68.8	54.8	60.5
6–10	6.7	25.8	12.5	22.6	16.9
11+	3.3	9.7	6.3	3.2	5.6

***One missing in Akinyele

Table 7
Sources of injectable contraceptives among previous & current users

Previous users Sources	LGA				Total (N = 338)
	AKL (n=82)	**Egbeda (n=89)**	**Ido (n=80)**	**Ona-Ara (n=87)**	
PMV	20.8	14.6	22.5	20.6	19.5
Health	65.8	76.4	67.5	65.5	68.9
Facility	13.4	8.9	13.9	13.9	11.5
CHW					
Total	**100**	**100**	**100**	**100**	**100**

Current users	**LGA**				
Sources	**Akinyele (n=26)**	**Egbeda (n=32)**	**Ido (n=20)**	**Ona-Ara (n=28)**	**Total (n=106)**
PMV	38.4	15.6	20	17.8	22.6
Health	61.6	62.5	70	71.4	66.0
Facility	0	21.9	10	10.8	11.4
CHW					
Total	**100**	**100**	**100**	**100**	**100**

DISCUSSION

PMVs play important roles in delivery of contraceptive services in Nigeria because they are closer to the people they serve. Data from the PMVs and women surveyed in this study confirm that majority of PMVs provide a broad range of reproductive health services including counselling, sale, and referral of contraceptives. These results are not new as findings from previous studies show that PMVs are one of the major providers of reproductive health services in Nigeria as well as in other African countries including Ghana (Lebetkin, Orr, Dzasi, Keyes, Shelus, Mensah, Nagai and Stanback, 2014) and Uganda (Akol, Chin- Quee, Wamala-Mucheri, Namwebya, Mercer and Stanback, 2014).

Although pharmacy laws in Nigeria (Federal Ministry of Health, 1964) do not permit PMVs to offer injectable contraceptives, 13% of PMVs in our study reported selling and 15% reported administering injectable contraceptives. These data are supported by the finding that a sizable number of women reported that they had received injectable services from PMVs. The PMVs who render this service are responding to the demand for this product by clients. Unfortunately, less than half of the PMVs surveyed had received formal training on how to perform this role even though a large majority provide some form of family planning services. This finding underscores the need for a formal training for PMVs to ensure that they are safe contacts for their clients.

Demand for injectable contraceptives from PMVs is likely to continue for a long time because PMVs are a major source of care for many citizens who practice self-care. Another reason why this trend is likely to continue is the fact that many of those who own PM shops are either retired health workers or those in service who operate this business as a means of alternative source of income. Many clients typically rely on this category of PMVs because of the belief that they are trained. In this study, about 67% of the women rated PMVs' services as 'good' which is an indication of satisfaction and trust even if some of the PMVs have not been adequately trained.

Policy implications and recommendations

The findings from this study have policy and programmatic implications. Patent medicine shops have the potential to expand access to a range of contraceptives including injectables (Stanback *et al*.,2015). This is particularly appropriate not only because Nigeria has low contraceptive prevalence but also due to the fact that the country has set a target to increase its current contraceptive from 10% to 36% by 2018 (DKT International, 2014). A policy is therefore needed to integrate trained PMVs into the primary health care system in Nigeria so that they can be safe contacts to their clients. This should be with special reference to rational marketing, use and medication counselling relating to patent medicine as well as prevention and control of common diseases. A policy which would specify their roles on sale and use of injectable contraceptive is desirable. A policy review is equally desirable in respect of their training certification, licensing, supervision and adherence to official guidelines concerning the sale of patent medicine including contraceptive products. We conclude by proposing six recommendations to achieve these goals. There is need for training of PMVs in family planning skills. The study by Oshiname and Brieger (1992) confirm that training is a feasible and realistic intervention that will enable PMVs be safe contact for their clients. The bulk of the training given to PMVs has been implemented by non-governmental organisations. This should be sustained and even expanded as evidence show that not all PMVs have received such training. In addition, governmental agencies need to actively participate in training for PMVs on delivery of contraceptives. Such training must emphasise the expected role of PMVs and the need to deliver safe services including referral to clients who require injectable contraceptives.

1. There is need for greater collaboration between relevant government agencies and NAPPMED to promote effective referral mechanism between PMVs and health facilities.
2. The Ministry of Health which provides a licence to PMVs should, as matter of policy, routinely conduct formal training programme with a carefully designed curriculum for all persons who apply for a licence to start a patent medicine business. Licences should be issued to only those who pass the initial test. Thereafter,

regular continuing education should be organized for them to ensure that they keep themselves abreast of the development in the business. The NAPPMED also has important role to play in organizing educational programs and encouraging members to participate in such programs to ensure that PMVs provide safe services to clients.

3. The Governments at all levels have a responsibility of establishing more health facilities that are staffed by trained health workers; such facilities should be provided with adequate drugs and equipment and supplies that will ensure their full utilisation. When implemented, this intervention will in turn further facilitate appropriate referral by the PMVs.
4. Users of injectables contraceptives should be fully counselled about the side effects of DMPA in order to dispel myths and misconceptions. The capacity of PMVs should be enhanced to provide appropriate counselling services to clients that approach them for injectable contraceptives and then refer such clients.
5. Despite the finding that some PMVs are selling and administering injectable contraceptives, more research evidence is needed to determine the safety and feasibility of this practice. A pilot study is recommended to train PMVs to counsel women about injectables, screen women for eligibility, sell the method, and administer injections with close supervision and monitoring by NAPPMED and the Federal Ministry of Health. The PMVs should also be trained to refer clients to health facilities for complications and for the provision of long-acting and permanent methods of contraception. The experience reported by Akol *et al*, in Uganda show that it is feasible to train PMV to safely deliver injectable contraceptives as part of community-based family planning providers (Akol *et al*., 2014). A recent technical consultation on the role of PMVs concluded that with appropriate training and monitoring, PMVs can screen, counsel and safely administer injectables (Stanback *et al*., 2015). The recent introduction into Nigeria of Sayana Press, a progestin-only single, dose injectable contraceptive in a prefilled and sterile syringe that is easy to use once every 3-months (Program for Appropriate Technology for Health, 2014) makes this option feasible.

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