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MEDICINAL PLANTS IN NIGERIA EMPLOYED AS TRADITIONAL OXYTOCICS. AN UPDATED REVIEW

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Keywords:

Oxytocic activity, Nigeria, Leaf, Apocynaceae, *Spondias mombin*, *Ocimum gratissimum*, *Xylopia aethiopica*, *Vernonia amygdalina*

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ABSTRACT: This review examines research activities into oxytocic plants in Nigeria in the past 44 years (1982 2026) which focused on pregnant and non-pregnant female rats (73.07%), human (15.38%) and guinea pig (7.69%). According to publications, research activity was minimal (3.70%) during 1982-1991 period, but rose sharply to peak at 48.15% in 2012-2021. From various oxytocic research reports, 52 scientifically-proven medicinal plants in 36 families predominated by Apocynaceae (8.33%) and Fabaceae (6.25%) were identified. Leaf (47.06%) and stem (21.56%) top the list of frequently researched morphological parts, followed by fruit (11.76%), root (9.80%), whole herb (5.88%) and seed (3.92%). Apart from uterotonic activity (83.05%) of plant extracts which formed the focus of this review, tocolytic action has also been documented for eleven plant extracts (16.95%). Studies involving potentiation of effect of agonists were few (7.02%) and were exemplified by *Vitex doniana* stem bark, *Spondias mombin* leaf, *Piper guineense* leaf and seed, *Opuntia ficus-indica* stem and *Musanga cecropioides* stem bark. In this review, *Spondias mombin*, *Xylopia aethiopica*, *Ocimum gratissimum* and *Vernonia amygdalina* were the most investigated oxytocic plants. Inhibition of contractile effect of extracts on rat uterus by atropine or salbutamol was documented in few researched cases (11.36%), for example *Phoenix dactylifera* fruit, *Hunteria umbellata* fruit and *Globimetula braunii* leaf. Full characterization of bioactive compounds was limited to five (9.80%) of the documented plants for example *Ficus exasperata* leaf, *Sida acuta* leaf and *Monechma ciliatum* leaf. This review has documented efficacious oxytocic plants growing in Nigeria and emphasized the need for isolation of their bioactive compounds for future clinical trials.

INTRODUCTION: Oxytocics are natural products or chemical entities used to induce and maintain labour, remove the retained placenta, regulate post-partum bleeding and as abortifacient. They increase the spontaneous activity of the uterus causing increase in contractions [1, 2]. Medicinal plants used to speed birth are usually taken towards the end of gestation period or at the on-set of labour pains.

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Plants that produce uterine contractions have similar action as that of oxytocin hormone, produced on the posterior lobule of the hypophysis, which stimulates the uterus, experience strong contractions, thus producing labour [1].

From literature, several studies have documented numerous medicinal plants employed by rural populations in Africa to facilitate childbirth. Examples include those of Uganda [3], Democratic Republic of Congo [4], Tanzania [5], Cameroon [6], Côte d'Ivoire [7] and Ghana [8]. However, in Nigeria, few ethnobotanical surveys involving pregnant women and traditional birth attendants in the north (Katsina State) which listed 16 plant species [9] and in

Bayelsa State in the south-south where labour induction rank third with 35 species (16% of the plants used in family planning programme) [10] are known. Furthermore, Attah *et al.* [11] reported contractile effects for nine plants including *Commelina africana, Sida corymbosa, Vernonia amygdalina,* and *Ocimum gratissimum* in a combined ethnobotanical survey in Sokoto State, Abuja (northern Nigeria) and Edo State in the south-south. A polyherbal preparation in the Southeast Nigeria comprising one uterotonic plant, *Uvaria chamae* and five tocolytic plants (*Barteria fistulosa, Napoleonaea vogelii, Spondias mombin, Euphorbia convolvuloides* and *Ceiba pentandra*) was identified [12].

The need to update the traditional African herbal pharmacopoeia with scientifically-proven medicinal plants used in labour induction during childbirth as part of the family planning programme in Nigeria forms the basis of this review.

METHODS: In the course of this work, an extensive literature search was performed using platforms such as PubMed central, Google and Google Scholar. The search terms used were "oxytocic activity", "labour-inducing plants", "uterotonic activity", "contractile activity", "uterine contractile", "bioactive compounds", "ethnobotanical survey", "ethnographic studies" and "Nigerian plants". Focus was solely on reports in English. In addition, information on *in-vitro* studies published in original articles, peer-reviewed journals, books were included in the review.

RESULTS AND DISUSSION:

Distribution and Oxytocic Activities of Nigerian Folklore: A review of publications on medicinal plants used in the traditional induction of labour in pregnant women conducted in Nigeria between 1982 and 2026 revealed 52 plant species distributed within 50 genera and 36 families **Table 1**. The predominant families were Apocynaceae (8.33%) and Fabaceae (6.25%), followed by eight less prominent families such as Anacardiaceae, Rubiaceae, Lauraceae, Malvaceae, Euphorbiaceae, Acanthaceae, Lamiaceae and Asteraceae in equal ranking of 4.16%. By comparison, Fabaceae and Euphorbiaceae in Cote d'Ivoire [7], Fabaceae in Democratic Republic of Congo [4], Asteraceae and Malvaceae in Cameroon [6], were the top ranking families in other African countries. The similarity in families of Nigerian oxytocic plants with those of other countries is because tropical plants grow commonly in sub-Saharan Africa. In addition, twenty five least popular families accounted for 52.08% of the distribution. From this review, apart from Euphorbia and Sida, every other genus was represented by one plant species. Furthermore, the frequently researched morphological parts were leaf (47.06%), stem (21.56%) and fruit (11.76%) **Fig. 1** probably because of ease of collection. Thus, Nigerian traditional oxytocics appear to have similar dominant morphological part with those of other African countries [3, 4, 5, 7, 8]. In this current review, root bark (9.80%), whole herb (5.88%) and seed (3.92%) were uncommonly investigated. In view of the large number of plant species with proven oxytocic action in Nigeria, there may be need to undertake further ethnobotanical surveys to discover more traditional labour-inducing plants for pharmacological studies. Large number of oxytocic plants have been documented in ethnobotanical surveys in other African countries such as Uganda (75 plants) [3], Democratic Republic of Congo (98 plants) [4], Cote d'Ivoire (48 plants) [7] and Cameroon (22 plants) [6] without appreciable scientific validation of activity.

TABLE 1: PROFILE OF NIGERIAN PLANTS WITH OXYTOCIC ACTIVITY

S. no.	Plant/Family	Common name	Plant part studied	Activity	Isolated bioactive compounds	Ref.
1	*Ananas comosus* (L.) Merr. (Bromeliaceae)	Pineapple	fruit	Undiluted juice increased amplitude of contractions dose-dependently in non-pregnant ratuteri *in-vitro*. Similar results replicated in pregnant rats	5-Hydroxy tryptamine	13 14
2	*Anthocleista djalonensis* A. Chev (Gentianaceae)	Cabbage tree	Leaf	AQ fraction of MeOH extract inhibited (tocolytic action) contractile responses of oxytocin and Ca^{2+} ions on	Secoiridoids and iridoids, alkaloids	15

				diethylstilboesterol-pretreated no-pregnant ratuterus		
3	*Barteria fistulosa Mast. (Passifloraceae)*	Ant tree	Leaf	Ethanol (EtOH) extract gave tocolytic effect on Female rat uterus	Saponins, alkaloids	12
4	*Brachystegia eurycoma Harms (Fabaceae)*	African soup thickener	Stem bark	Fresh methanol (MeOH) extract inhibited female mouse uterine contractility (IC50 1.4 mg/ml), contractility restored in extract stored for at least 24h	Isoflavones (Genistein, prunetin) and caffeine	16
5	*Brysocarpus coccineus Schum & Thonn. (Connaraceae)*	Huntsman' s pepper	Leaf	EtOH extract enhanced spontaneous uterine muscle contraction in non-gravid rat and sustained it from day 14 to day 28. Effect was not attenuated by atropine	Flavonoids	1, 17
6	*Calotropis procera (Aiton) W. T. Aiton (Apocynaceae)*	Sodom apple	Stem bark	Aqueous (AQ) extract (200, 400 µg/mL) induced sustained increase in human myometrial smooth muscle cell contractility	Saponin glycosides, cardiac glycosides, flavonoids, triterpenoids	11
7	*Carica papaya L. (Caricaceae)*	Pawpaw	Leaf	MeOH extract caused dose related, significant increaseinbaseline tone and induced spontaneous, rhythmic, myogenic contractions of the uterine muscle strips from stilboesterol-pretreated, non-pregnant female and pregnant rats	Proteolytic enzymes (papain and chymopapain), alkaloids (carpain, pseudocarpain)	18
8	*Cassytha filiformis L. (Lauraceae)*	Dodder laurel	Stem	AQ extract stimulated rat uterine contraction comparable to oxytocin	Aporphine alkaloids (cassythine, dicentrine)	19
9	*Ceiba pentandra L. (Gaertn,) (Malvaceae)*	Silk cotton tree	Stem bark	EtOH extract gave tocolytic effect on female rat uterus	Sterols, flavonoids, triterpenoids	12
10	*Chrysophyllum albidum L. (Sapotaceae)*	Cherry	Fruit	Undiluted juice (0.05-0.4 mL), administered for 24-72 h., induced multiple contractions (249-461.60%) of fertile female pregnant rat uteri	Alkaloids, flavonoids, saponins	20
11	*Commelina africana L. (Commelinaceae)*	Dayflower	Leaf	AQ extract (200, 400 µg/mL) induced sustained increase (2.5-3.5h) in human myometrial smooth muscle cell contractility (31.80% in 210 min)	Alkaloids, flavonoids, saponins	11
12	*Costus lucanusianus J. Braun (Costaceae)*	Spiral ginger	Whole herb	AQ extract stimulated increased contractions in stilboesterol-pretreated uterus on non-pregnant rat. Atropine and salbutamol antagonized effect of extract	Saponins, steroidal sapogeniss, alkaloids, terpenoids	21
13	*Dalbergia saxatilis Hook.f (Fabaceae)*	West African rosewood	Root	Contractility of uterine smooth muscle by isolated glycoside was attenuated in Ca2+-free medium	Glycoside (dalsaxin)	22
14	*Diodia scandens*	Itching	Leaf	EtOH extract stimulated uterine	Saponins,	23

	Sw.(Rubiaceae)	grass		contractions of pregnant guinea pig	alkaloids, cardiac glycosides	
15	*Dryopteris filix-mas (L.) Schott (Dryopteridaceae)*	Male fern	Leaf	MeOH extract inhibited oxytocin-induced and high KCL-induced uterine contractions In rat	Fatty acids, alkaloids, saponin glycosides	24
16	*Duranta repens L. (Verbenaceae)*	Sky flower	Leaf	AQ extract (100, 200 µg/mL) induced sustained increase in human myometrial smooth muscle cell contractility	Iridoid glycosides, phenylethanoid glycosides, sitosterol	11
17	*Entada mannii (Oliv.) Tisser (Fabaceae)*	African dream herb	root bark	MeOH exerted smooth muscle uterotonic effect on non-pregnant female rat uterus without potentiating effect of agonists	Flavonoids, sterols, polyterpenes	25
18	*Euphorbia convolvuloides Hochst. ex. Benth. (Euphorbiaceae)*	Dove's milk	Whole plant	EtOH extract gave tocolytic effect on female rat uterus	Triterpenoids (lupeol, betulinic acid)	12
19	*Euphorbia heterophylla L. (Euphorbiaceae)*	Mexican fire plant	Leaf	AQ extract enhanced uterine contractility in female rats and comparable to oxytocin and acetylcholine. Pretreatment with salbutamol reduced uterine contractility In Ca2+deficient medium	Phenols, triterpenoids, glucosides	26
20	*Ficus exasperata Vahl.(Moraceae)*	Sandpaper tree	Leaf	AQ extract stimulated contractions on uterus of pregnant rat at higher concentrations	Pheophytin, pheophorbide, flavonoids and pyrimidine derivatives	27
21	*Globimetula braunii (Engl.) Van Tiegh (Loranthaceae)*	Mistletoe	Leaf	AQ extract stimulated increased contractions in stilboesterol-pretreated uterus on non-pregnant rat, comparable to oxytocin. Atropine and salbutamol inhibited oxytocin.	Flavonoids, alkaloids, saponins, triterpenes	28
22	*Graptophyllum pictum (Linn.) Griff. (Acanthaceae).*	Caricature plant	Leaf	EtOH extract (400 mg/mL) exerted increased uterine contraction in pregnant rat	Alkaloids, flavonoids steroids	27
23	*Hunteria umbellate (K. Schum) Hallierf. (Apocynaceae)*	"Abe ere"	Fruit pulp	AQ extract stimulated Increased contractions in stilboesterol-pretreated uterus on non-pregnant rat. Effect was antagonized by atropine	Alkaloids, flavonoids	30
24	*Hyptis suaveolens (L.) Poit (Lamiaceae)*	Bush mint	Leaf	AQ extract (200, 400 µg/mL) induced sustained increase in human myometrial smooth muscle cell contractility	Terpenoids, alkaloids, flavonoids	11
25	*Icacina trichantha Oliv. (Icaniaceae)*	False yam	Leaf	MeOH extract significantly decreased oxytocin and acetylcholine-induced contractions of uterus of non-pregnant female rat (relaxant action)	-	31
26	*Lagenaria breviflora (Benth.) Roberty (Cucurbitaceae)*	Wild colocynth	Fruit	AQ extract induced oxytocin-like contractions of gravid and non-gravid isolated rat uteri.	Saponins, cucurbitacins, alkaloids	32
27	*Launaea taraxacifolia*	Wild	Whole plant	AQ extract produced concentration-	Saponins,	33

	(Willd.) Aminex C. Jeffrey (Asteraceae)	lettuce		dependent uterotonic activity (greater than oxytocin) on stilboesterol-pretreated isolated uterine horns from non-pregnant rat.	flavonoids, triterpenoids	
28	*Laurus nobilis L. (Lauraceae)*	Bay leaf	Leaf	Exhibited uterorelaxant effect on non-pregnant mouse uterus	Essential oils (Eucalyptol, eugenol), flavonoids, sesquiterpene lactones (costunolide, reynosin)	34
29	*Monechma ciliatum (Jacq.) Milne-Redh. (Acanthaceae)*	Lizard's tail	Leaf	MeOH extract stimulated increased contractions in stilboesterol-pretreated uterus on non-pregnant rat	Peptide containing tyrosine, leucine and serine	35
30	*Morinda lucida Benth (Rubiaceae)*	Brimstone tree	Leaf	Extract reduced contraction of stilboesterol-pretreated uterine smooth muscle in pregnant and non-pregnant mice. It blocked contraction induced by oxytocin (tocolytic action)	-	36
31	*Musanga cecropioides R. Brown (Urticaceae)*	Umbrella tree	Stem bark	AQ extract (12.5– 1600 mg/mL) produced dose-related increase in force of uterine contractions on stilboesterol-pre-treated non-pregnant female Wister albino virgin rats. Oxytocin potentiated action of extract	Saponins, flavonoids, alkaoids	37
32	*Napoleona vogelii Hook & Planch. (Lecythidaceae)*	Africannut tree	Leaf	EtOH extract gave tocolytic effect on female rat uterus	Saponins, flavonoids	12
33	*Newbouldia laevis (P.Beauv.) Seem ex Bureau (Bignoniaceae)*	African border tree	Leaf	EtOH extract (0.0005-2.0 mg/mL) was more active than AQ in promoting uterine contractions of isolated non-pregnant rat uterus pre-treated with diethylstilboesterol	Alkaloids, saponins, flavonoids	38
34	*Ocimum gratissimum L. (Lamiaceae)*	Scent leaf	Leaf	n-Hexane fraction (100-800mg/mL) of EtOH extract was the most active to contract uterus of virgin female guineapig.	Flavonoids and phenols	11, 39
35	*Opuntia ficus-indica (L.)Mill. (Cactaceae)*	Prickly pear	stem	MeOH extract (0.2- 2.0 mg/mL) was more potent than AQ fraction in stimulating concentration-dependent increase in amplitude of spontaneous rat uterine contraction accompanied by inhibition of contraction frequency in normal salt medium. Both tested agents failed to potentiate oxytocin in the absence of calcium, and also inhibited high KCL by suppressing contraction amplitude	Flavonoids, phenolic acids	40 40
36	*Petiveria alliacea L. (Petiveriaceae)*	Guinea hen weed	Seeds	AQ extract stimulated contractions on uterus of pregnant rat	Sulphur compounds	41
37	*Phoenix dactylifera L. (Arecaceae)*	Datepalm	Fruit	Salbutamol inhibited EtOH extract-induced spontaneous contraction of pregnant rat uterus	Alkaloids, saponins, flavonoids	42

38	*Psidium guajava L. (Myrtaceae)*	Guava	stem bark	MeOH extract was more potent than AQ and DCM fractions in eliciting oxytocic effects on isolated rat uterus	Flavonoids, terpenoids, phenolicacids	43
39	*Piper guineense Schum. (Piperaceae)*	Ashanti pepper	Leaf, seed	AQ extract induced spontaneous concentration-dependent rat uterine muscle contractions up to 14 days, also potentiated oxytocin-induced contractions	Alkaloids, glycosides, flavonoids, anthraquinones	1, 44
40	*Rinorea dentata P. Beauv) Kuntze (Violaceae)*	Kuntze	N/A	Weak uterotonic effect	Cyclotides, peptide (riden)	45
41	*Saba comorensis (Boj. ex A.DC) Pichon (Apocynaceae)*	Rubber vine	Root bark	AQ extract (100 µg/mL) induced sustained increase in human myometrial smooth muscle cell contractility	Alkaloids, flavonoids saponins	11
42	*Sclerocarya birrea (A.Rich) Hochst (Anacardiaceae)*	Jelly plum	Stem bark	AQ extract (200 µg/mL) induced sustained increase in human myometrial smooth muscle cell contractility	Polyphenols, flavonoids, triterpenoids	11
43	*Sida acuta Burm. f. (Malvaceae)*	Common Wire weed	Leaf	Ergometrine produced 50% reduction in EtOH extract-induced rat uterine contraction, while atropine gave inhibition	Quinazoline alkaloid (vasicine)	46
44	*Sida corymbosa R.E.Fr. (Malvaceae)*	Broom weed	Leaf	AQ extract (200, 400 µg/mL) induced sustained increase (2.5 - 3.5h) in human myometrial smooth muscle cell contractility (28.3% in 210 min)	Polypeptides	11
45	*Spondias mombin L. (Anacardiaceae)*	Hogplum	Leaf	MeOH extract was more active than fractions in significantly ($P < 0.05$) increasing amplitude and frequency of spontaneous contraction of isolated uteri (gravid and non-gravid) of rat, also potentiated uterine-stimulant effects of acetylcholine, oxytocin, ergometrine and PGF2a dose-dependently	Flavonoids, saponins, glycosides, terpenes, steroids	1, 47 48
			Root bark	MeOH extract contracted uterine horns of both stilboesterol-pretreated non-pregnant and pregnant female rats EtOH extract caused tocolytic effect on female rat uterus		12
46	*Solanum nigrum L. (Solanaceae)*	Black nightshade	Leaf	EtOH-AQ extract inhihited release of Ca , acetylcholine and oxytocin-induced contraction in distil boesterol-pretreated uterine smooth muscle in female rat, (relaxant effect)	Steroidal saponin, steroid alalkaloid	49
47	*Tacazzea apiculata Oliv. (Apocynaceae)*	Craw craw vine	Stem	MeOH extract (10-1000 mg/kg) contracted non-pregnant female rat uterus	Flavonoids, alkaloids, saponins	50
48	*Trema orientale (L.) Blume (Cannabaceae)*	Charcoal tree	Root bark	MeOH extract elicited dose-dependent increases in amplitude and frequency of spontaneous rat uterine contraction. No potentiation of effects of agonists. Extract	Alkaloids, steroidal saponins, flavonoids	51 51

				demonstrated tocolyticproperties on a preliminary basis, not contractile		
49	*Uvaria chamae P. Beauv (Annonaceae)*	Bush banana	Stem	Uterine contractile effect on female rat by EtOH extract	Flavonoids, alkaloids, saponins	12
50	*Vernonia amygdalina Del. (Asteraceae)*	Bitter leaf	Leaf	Uterine contraction amplitude induced by AQ extract (100 mg/mL) in virgin guinea pig matched that of ergometrine (9.58±0.39 mm) AQ extract(100, 200 µg/mL) induced sustained increase (2.5 -3.5h) in human myometrial smooth muscle cell contractility (28.3% in150min)	Saponins, sesquiterpene lactones	52 11
51	*Vitex doniana Sweet (Verbenaceae)*	Black plum	Stem bark	AQ extract stimulated contractions on uterus of pregnant rat and potentiated action of oxytocin and ergometrine	Alkaloids, flavonoids, saponins	53
52	*Xylopia aethiopica (Dunal)A. Rich (Annonaceae)*	Ethiopian pepper	Fruit	n-Hexane fraction (100-800mg/mL) of EtOH extract was the most active to contract uterus of virgin female guinea pig	Flavonoids and phenols	39, 54

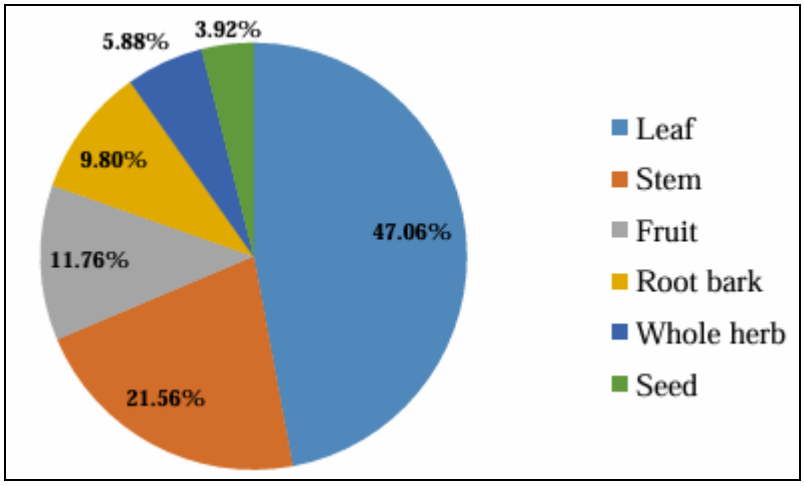


FIG. 1: DISTRIBUTION OF MORPHOLOGICAL PARTS

The trend of oxytocic research activities in the past 44 years (1982-2026) in Nigeria on ten-year basis is presented in Fig 2: 1982-1991 (3.70%), 1992-2001 (7.40%), 2002-2011 (22.22%), 2012 2021 (48.15%), 2022-2031 (18.52% ongoing). In Nigeria, oxytocic research was minimal at the onset in 1982-1991, but rose to attain a maximum (48.15%) in 2021 **Fig. 2**. The improved research activity (18.52%) in the current research interval (2022-2031) is noteworthy, with prospects of further improvement by 2031. Overall, 52 scientifically-investigated oxytocic plant species are documented for Nigeria. In sub-Saharan Africa, out of the over 200 plant species recognized as traditional oxytocics, only 82 species (approx. 41%) have been pharmacologically validated as at 201355. In this review, the large number of scientifically-validated oxytocic plants in Nigeria (52) compared with other countries possibly ranks Nigeria first in this research area.

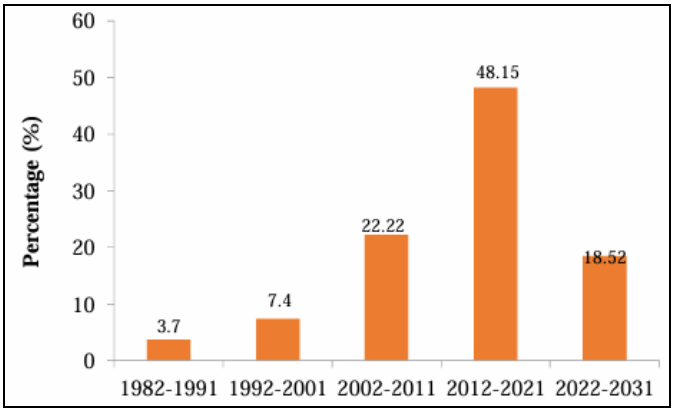


FIG. 2: TREND OF OXYTOCIC RESEARCH IN NIGERIA

A comprehensive documentation of reports of investigations into Nigerian folklore for oxytocic activity using different in vitro models is presented in **Table 1.** Based on this review, uterotonic action in pregnant and non-pregnant female rats (73.07%) was mostly reported. In addition, studies on human (15.38%), guinea pig (7.69%) and mice (3.84%) myometrial smooth muscle were documented. This is in agreement with similar studies reported elsewhere [46].

However, tocolytic action has been established for eleven plant extracts (16.95%) including *Trema orientale* root bark, *Spondias mombin* root bark, *Napoleona vogelii* leaf, *Laurus nobilis* leaf and *Euphorbia convolvuloides* whole herb. In the few studies involving potentiation of agonists, positive results were recorded for only five plants (8.69%) for example *Vitex doniana* stem bark, *Spondias mombin* leaf, *Piper guineense* leaf and seed, and *Musanga cecropioides* stem bark. According to the number of publications considered for this review, *Spondias mombin* was the most studied plant (5.88%), followed by *Ocimum gratissimum, Vernonia amygdalina* and *Xylopia aethiopica* in equal ranking of 3.92%. Inhibition of contractile effect of extracts on rat uterus by atropine or salbutamol was documented in few researched cases, for example *Phoenix dactylifera* fruit, *Hunteria umbellata* fruit and *Globimetula braunii* leaf **Table 1**.

It is noteworthy that some of the plant species documented in this review were found to be used elsewhere for similar purpose. For example, *Calotropis procera, Ficus exasperata* and *Piper guineense* in Cote d'Ivoire7, as well as *Vernonia amygdalina, Carica papaya* and *Commelina africana* in Ugandan [3] oxytocic herbal remedies have been published. In most African traditional settings, oxytocic liquid recipes are usually administered orally [3, 6, 7] in the third trimester of pregnancy. Occasionally, rectal evacuation enema for example in Cameroon [6] and cataplasm in Democratic Republic of Congo [4] are alternative routes of administration.

Isolated Bioactive Compounds: Furthermore, limited full characterization of bioactive compounds from five Nigerian oxytocic plants (9.80%) was evident from this review **Table 1**. *Ficus exasperata* leaf aqueous extract that furnished a chlorophyll derivative, pheophytin and its derivative, pheophorbide in addition to flavonoids and pyrimidine derivatives is known [23]. Earlier, Uguru *et al* [29] isolated peptide containing tyrosine, leucine and serine from *Monechma ciliatum,* while Bello *et al* [16] characterized isoflavones from *Brachystegia eurycoma*. Moreover, a quinazoline alkaloid (vasicine) was reported in *Sida acuta* [45].

Other bioactive compounds such as riden, a cyclotide peptide from *Rinorea dentata* [44] and the triterpenoid glycoside (dalsaxin) from *Dalbergia saxatilis* root [22], have also been reported. Nevertheless, specific bioactive oxytocic compounds were not isolated from majority of the plants, but activity was rather attributed to the group of secondary phytochemicals. However, Gruber *et al* [14] have previously reviewed constituents of labour-inducing plant extracts. This finding therefore corroborates the limited characterization reported for Nigerian plants.

CONCLUSION: This review has documented fifty-two medicinal plants in Nigeria which are dominant in the Apocynaceae and Fabaceae. These have been studied for their possible oxytocic effects during the past forty-four years. Mainly uterotonic and to a lesser extent, tocolytic effects of mostly leaves and stem were frequently published.

Although, oxytocic research became popular in Nigeria during 2012-2021 research period, it is nevertheless an uncommonly investigated pharmacological activity in view of the number of plants involved. Of the four frequently studied plant-based oxytocics, *Spondias mombin, Xylopia aethiopica, Ocimum gratissimum* and *Vernonia amygdalina*, none has been fully characterized for their bioactive compounds and mechanisms of action. More experimental studies will be required in this direction before the assessment of clinical efficacy.

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