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**Address:**

Faculty of Nursing Sciences,  
College of Health Sciences,  
Ladoke Akintola University of Technology,  
P. M. B. 4000, Ogbomoso, Nigeria.  
**Tel: +2348033579737**

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1. LAUTECH Journal of Nursing (LJN) has the goal of becoming the most widely cited Nursing Journal in West Africa with Impact Factor Value of 0.861 based on International Citation Report (ICR) for the year 2020-2021.
2. The LJN has the tripartite mission of:
  - (a) Promoting a culture of excellence in Nursing Research.
  - (b) Encouraging the exchange of profound and innovative ideas capable of generating creative practice in nursing research practise.
  - (c) Disseminating information on nursing related development that are not usually easily available to academics and practitioners.
3. The Journal will accordingly encourage the publication of the following categories of papers.
  - (a) Research papers that move away from orthodoxy and which really break new grounds in terms of methodology and findings.
  - (b) Essays and issues papers that contribute to reorienting received ideas, values and practices.
  - (c) Documents emanating from national and international conferences, as well as from largescale research work that emerging trends and thinking in nursing related development.
4. LJN is published biannually in any area of nursing interest or relevant to needs of academics and practitioners.

In this edition, eighteen (18) manuscripts scale through the eye of the needle of the Editor-in Chief. The title of the papers in this edition are: effect of cold compress on the reduction of musculoskeletal pain, swelling and hemarthrosis among orthopaedic patients in Lautech Teaching Hospital, Ogbomoso, Oyo State, Nigeria; Awareness of Prostate Cancer Screening Among Male Civil Servants In Egor Local Government Area, Edo State, Nigeria; Knowledge, Perception And Utilization Of Maternal And Child Health Care Among Women In Ogbomosho, Oyo State, Nigeria; Assessment Of Knowledge And Utilization Of Electronic Medical Records Among Nurses In Secondary Health Care Facilities In Jigawa State, Nigeria; Effect Of Midwife Led Educational Intervention On Knowledge Of Anaemia And Risk Factors Among Pregnant Women Attending Ante-Natal In Selected Primary Health Care Facilities In Osun State, Nigeria; Knowledge Of Health Implications Of Rape And Associated Factors Among Male Undergraduates In Ahmadu Bello University Zaria, Nigeria; Effectiveness Of Family Caregivers Centered Nursing On Knowledge Of Pressure Ulcer Prevention In A Tertiary Health Facility In Kano, Nigeria; Knowledge And Practice Of Malaria Prevention Among Expectant Mothers In Selected Primary Health Centers In Mushin Local Government Area, Lagos State, Nigeria; Prevalence Of Sexual And Psychological Abuse In Almajiri System Of Education In Zaria Local Government Area, Kaduna State, Nigeria; Assessment Of Male Involvement In Maternity Care In Selected Health Facilities In Ado Ekiti, Ekiti State, Nigeria; Educational Intervention On Knowledge Of Prevention And Self-Care Practices Of Selected Lifestyle Diseases Among Civil Servants In State Secretariat Oke-Mosan, Abeokuta Ogun-State, Nigeria; Nursing In An Age Of Change In Nigeria; Knee Replacement Surgery: The Role Of The Nurse In Patient Safety In The Operating Room, The Nigerian Perspective; Choice Of Places Of Delivery Among Women Attending Ante Natal Clinic At Ngwo Health Centre; Systematic Review On Adolescent Girls' Knowledge And Practice Of Menstrual Hygiene In Nigeria; Knowledge And Prevention Of Hypertension Among Patients Attending Medical Outpatient Department Of Garki Hospital, Abuja, Federal Capital Territory, Nigeria And Socio-Cultural Factors Influencing Nutritional Status In Under-Five Children In Akure North Local Government, Ondo State, Nigeria.

## **EDITORIAL DESK**

Welcome to LAUTECH Journal of Nursing!

LAUTECH Journal of Nursing focus on but not limited to research findings in the different areas of Nursing: Nursing Care, Nursing Education, Medical Surgical Nursing, Maternal and Child Health Nursing, Community Public Health Nursing, and Psychiatric/Mental Nursing. This journal is published to promote quality scholarly writing and hence instigating and generating vibrant discourse in the different areas of nursing. Apart from providing an outlet for publications of research findings, it offers opportunities for professionals and students to disseminate their views or position on topical issues and emerging theories within the scope of the journal. The Journal is peer reviewed by seasoned scholar. Sixty two authors have contributed in one way or the other to the thirteenth edition of the journal.

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[doctoradeyemo@yahoo.com](mailto:doctoradeyemo@yahoo.com) or [lautechjournal@gmail.com](mailto:lautechjournal@gmail.com)



# LIST OF CONTRIBUTORS

- ABIODUN FUNMILAYO LAYENI** Faculty of Nursing Science,  
College of Health Sciences,  
Bowen University, Iwo, Osun State  
Phone number: 09050000273  
Email Address: funmiyeni99@gmail.com
- ABDULLAHIM.** Department of Art and Social Science,  
Faculty of Education,  
Ahmadu Bello University, Zaria- Nigeria  
Phone No: 08169825372  
Email: ummuhajara2014@gmail.com
- ABIOYE, ABIGAIL ADEBISI** Department of Maternal and Child Health Nursing,  
School of Nursing Science,  
Obafemi Awolowo University Teaching Hospital  
Complex, Ile Ife  
Phone No: 08035320808  
Email: sundayabioye@gmail.com
- ADAMU-ADEDIPE FOYEKEMIO.** Department of Maternal and Child Health Nursing,  
School of Nursing Science,  
Crysland University, Ogun State.  
Phone No: 08033462616  
Email: foyekemiadamuadedipe@gmail.com
- ASADU L. CHINENYE** Nursing Department, University of Benin  
Bethel Faith Medical Center,  
Erediauwa, Ekenwa Rroad Benin City  
Phone No: 07030255496  
Email: chinenyeadu385@gmail.com
- AUWALUYUSHA'U** Jigawa State College of Nursing Science,  
Birnin-kudu Campus. Nigeria  
Phone: 08036825516, 08153365775  
Email: auwalyushau1@gmail.com,
- ATTAHIR, I.** Department of Nursing Science,  
Kaduna State University, Nigeria  
Phone: 0806 913 4559  
Email: drhaqqun@gmail.com
- ABDULRAHEEM, AMINA** Department of Nursing Science,  
University of Maiduguri,  
Borno State, Nigeria.  
Phone No. 08065480186  
Email: aminaabdulraheem@unimaid.edu.ng
- AFOLABI, ADEBUKUNOLAO.** Obafemi Awolowo University Teaching  
Hospitals Complex, Ile-Ife, Osun-State, Nigeria  
Phone No: 08034548318  
Email: bukieafolabi@yahoo.com

**ADAMU DALHATU**

Department of Nursing Sciences,  
Bayero University Kano, Nigeria  
Phone No: 08039503072  
Email: adamudalhatu206@gmail.com

**ABOSEDE ADEKUNBI FAROTIMI**

Department of Nursing Science,  
Faculty of Clinical Science, College of Medicine,  
University of Lagos.  
E-mail: afarotimi@unilag.edu.ng  
Phone No: 08025952450

**ABDURRAHMAN SALIHU KOMBO**

Department of Nursing Sciences,  
Ahmadu Bello University, Zaria, Nigeria  
Phone No: 08032916542, 08061307902  
Email: aksalihu@abu.edu.ng

**ABARIBE E. CHIDINMA**

Department of Community Health Nursing,  
Babcock University, Ogun State  
Phone No. 07038991043  
Email: abaribech@babcock.edu.ng

**AGBEDIA CLARA**

Department of Nursing Science,  
Faculty of Allied Health Sciences,  
Benson Idahosa University,  
Benin City, Edo State, Nigeria.  
Phone No: 08033814530  
Email: oniovo4life@gmail.com

**AIKABELI PRISCILLA O.**

Department of Nursing Science,  
Faculty of Allied Health Sciences,  
Benson Idahosa University,  
Benin City, Edo State, Nigeria.  
Phone No: 07036404241  
Email: emikeaikabeli@yahoo.com

**ADEKEMISOLA R. JIMOH**

Department of Nursing Science,  
Faculty of Health Sciences,  
National Open University of Nigeria,  
Abuja, Nigeria.  
Phone No: +2348034125028  
Email: jadekemisola@gmail

**AKINBOWALE BUSAYO TEMILOLA**

Department of Nursing Science,  
Osun State University, Osogbo  
Busayo.akinbowale@uniosun.edu.ng  
+2348034125952

**AMINA MUHAMMED ALKALI**

College of Nursing Science,  
Ahmadu Bello University Teaching Hospital,  
Zaria.  
Phone No: +2348063729417  
Email: ameenamama.83@gmail.com

- BATURE F. U.** Department of Nursing Science,  
Faculty of Allied Health Sciences,  
College of Allied Health and Pharmaceutical Sciences,  
Kaduna State University. Kaduna.  
fatimabature143@gmail.com  
08063166005
- BALARABE F.** Department of Nursing Science,  
Ahmadu Bello University,  
Zaria. Kaduna State, Nigeria.  
Phone No: +2348068345117  
Email: fatimabalarabe68@gmail.com
- BALARABE R.** Department of Nursing Science,  
Ahmadu Bello University,  
Zaria. Kaduna State, Nigeria.  
Phone No: 08036436229  
Email: hamdanrahma@gmail.com
- BIDMUS, LATEEF IYANDA** Department of Community/Public Health Nursing,  
Faculty of Nursing Sciences,  
Ladoke Akintola University of Technology,  
Ogbomoso, Oyo State.  
Phone No: 08063068769  
Email: lateefiyandabidmus@gmail.com
- CHINEDUM I. AHAIWE** Department of Nursing Science,  
Faculty of Nursing and Allied Health Sciences,  
University of Abuja  
Phone No: 09030545657  
Email: ahaiwe2@aol.com
- DALHAT K. S.** Department of Nursing Science,  
Ahmadu Bello University, Zaria  
Phone No: 07035385167  
Email: dksani@abu.edu.ng
- EDO-OSAGIE CHINENYENWA** Department of Nursing Science,  
University of Benin  
Phone No: 07030255496  
Email: chinenyenwa.edo-osagie@uniben.edu
- ELIZABETH M. JOSEPH-SHEHU** Department of Nursing Science,  
Faculty of Health Sciences,  
National Open University of Nigeria,  
Abuja, Nigeria.  
Phone No: +2347034487611  
Email: ejoseph-shehu@noun.edu.ng,
- ENUNWAONYE, HOSSANNA C.** Department of Nursing Science,  
Faculty of Allied Health Sciences,  
Benson Idahosa University,  
Benin City, Edo State, Nigeria.  
Phone No: 08033869339  
Email: henunwaonye@biu.edu.ng

**EZE, UCHECHUKWU ELIAS**

Department of Nursing Sciences,  
Faculty of Basic Medical Sciences,  
College of Medicine,  
Enugu State University of Science and Technology  
Enugu, Nigeria  
Phone No: 08063729836  
Email: ezeuche@gmail.com

**EZE, UCHENNA AUGUSTINA;**

College of Nursing Sciences,  
Bishop Shanahan Hospital,  
Nsukka. Enugu State Nigeria  
Phone No: 07034982423  
Email: ucnurse66@gmail.com

**FAROOQ M. A.**

Department of Nursing Science,  
Ahmadu Bello University, Zaria- Nigeria  
Phone No: 08067271666  
Email: farooooq2013@gmail.com

**FOLAKEMI ESTHER AYO-IGE**

Directorate of Health Services,  
Federal Polytechnic, Ado Ekiti,  
Ekiti State, Nigeria  
Phone No: +2348038171464  
Email: ayoigef@gmail.com

**GBEMISOLA BOLANLE OGBEYE**

Department of Nursing,  
Faculty of Basic Health Sciences,  
Federal University,  
Oye Ekiti, Nigeria  
gbemisola.ogbeye@fuoye.edu.ng;  
gbemisolaogbeye@gmail.com  
+2348033663305, +2348075753175.

ORCID NUMBER: <https://orcid.org/0000-0002-3620-2689>

**HADIZAM. S.**

Department of Nursing Science,  
Ahmadu Bello University, Zaria- Nigeria  
Phone No: 08037196349  
Email: mohammedsanihadiza@gmail.com

**HAYAT I. M. GOMMAA**

Department of Nursing Science,  
Ahmadu Bello University, Zaria, Nigeria  
Phone No: 08096536406  
Email: h\_gommaa@yahoo.com

**HUSAINI MUHAMMAD AIKAWA**

Institute of Continuing Education,  
Bayero University Kano, Nigeria  
Phone No: 08032878751  
Email: hmaikawa.sce@buk.edu.ng

**IDRIS ABDULRASHID**

Department of Nursing Sciences,  
Bayero University Kano, Nigeria  
aidris.nur@buk.edu.ng,  
Phone:+2348063375818

**JOELOJO ALUKO**

Department of Nursing,  
College of Health Sciences,  
University of Ilorin,  
Kwara State, Nigeria.  
Phone No: 07015055376  
Email: joelforfavour@gmail.com

**KOMOLAFE O. FOLASADE**

Department of Community Health Nursing,  
Babcock University, Ogun State, Nigeria.  
Phone No: +2348063137818, +2347038991043,  
Email: folekomo@gmail.com

**MUSA-MALIKI, A. U.**

Department of Nursing Science,  
Ahmadu Bello University,  
Zaria. Kaduna State, Nigeria.  
Phone No: +2347038159582  
Email: aumusamaliki@abu.edu.ng

**MUNGE MARY**

Department of Nursing Science,  
Faculty of Allied Health Sciences,  
Benson Idahosa University,  
Benin City, Edo State, Nigeria.  
Phone No: 08068737793  
Email: mmunge@biu.edu.ng

**NIFEMI TUNRAYO BABALOLA**

Department of Nursing,  
College of Basic Health Sciences,  
Achievers University, Owo,  
Ondo State, Nigeria.  
Phone No: +2348167705280  
Email: nifeturayo@gmail.com

**NDIE, ELKENAH CHUBIKE**

Department of Nursing Science,  
Faculty of Health Science,  
National Open University of Nigeria.  
University Village, Cadastral Zone,  
Nnamdi Azikiwe Expressway, Jabi, Abuja, Nigeria.  
Phone No: 09120048771, 07066789961  
Email: chubuike2005@yahoo.com

**NWANNERIA. C.**

Department of Nursing Science.  
Faculty of Allied Health Sciences,  
College of Medicine,  
University of Nigeria, Enugu.  
Enugu State.  
Phone No: +2348064854206  
Email: ada.nwaneri.edu.ng

**OKAFOR N. ANTHONIA**

Department of Community Health Nursing,  
Babcock University, Ogun State  
Phone No: 08035273775

**OPARANMA FLORENCE U.**

Email: okafor@babcock.edu.ng  
Department of Nursing Sciences,  
Faculty of Basic Medical Sciences,  
College of Medical Sciences,  
Rivers State University Port Harcourt, Nigeria  
Phone No: +2348123563395  
Email: uche.florence2015@gmail.com

**OYEWUMI ZACCHEUS OPEYEMI**

Department of Community/Public Health Nursing,  
Faculty of Nursing Sciences,  
Ladoke Akintola University of Technology,  
Ogbomoso,  
Oyo State, Nigeria.  
Phone No: +2348037689685  
Email: zooyewumi@lautech.edu.ng

**OYEWUMI LYDIA OMOWUMI**

Department of Nursing Science,  
Ladoke Akintola University of Technology  
Open and Distance Learning Centre, Ogbomoso,  
Oyo State, Nigeria.  
Phone No: +2347039026486  
Email: looyewumi@lautech.edu.ng

**OYANA N. E.**

Department of Nursing Science,  
University of Benin, Benin City  
Phone No: 08066643513  
Email: nwakaegooyana@gmail.com

**OWOPETU, CHRISTIANA ADETOUN**

Department of Nursing Science,  
Lead City University, Ibadan, Oyo-State  
Phone No: 08060887574  
Email: owopetuc@babcock.edu.ng

**OPATUNJI FLORENCE OMOWUNMI**

University teaching hospital,  
Clinical Nursing Department Ibadan  
Phone No: 08035909007  
Email: opatunjiflorence@gmail.com

**RAYMOND T. L.**

Department of Nursing Science,  
Ahmadu Bello University,  
Zaria. Kaduna State, Nigeria.  
Phone No: +2348027427378  
Email: laurenciaray@yahoo.com

**SANI H. M.**

Department of Nursing Science,  
Ahmadu Bello University,  
Zaria. Kaduna State, Nigeria.  
Phone No: 08032824193  
Email: saneeshat4life@gmail.com

**SALIHU A. K.,**

Department of Nursing Science,  
Ahmadu Bello University, Zaria, Nigeria,  
Phone No: 08061307902  
Email: aksalihu@abu.edu.ng

**SANI M. S.**

Nursing Science Programme,  
Ahmadu Bello University Distance Learning  
Center, Zaria- Nigeria  
Phone No. 08032824193  
Email: saneeshat4life@gmail.com

**SALISU ALIYU**

Department of Computer Science,  
Ahmadu Bello University Zaria. Nigeria  
Phone No: 08067993631  
Email: aliyusalisu@abu.edu.ng

**SOWUNMI, CHRISTIANA  
OLANREWAJU**

Department of Maternal and Child Health Nursing,  
School of Nursing Science,  
Babcock University, Ilishan-Remo, Ogun-State  
Phone No: 08023500321  
Email: lanresowunmi@gmail.com

**TEMITOPE EBUNOLUWA  
OSHINYEMI**

Department of Nursing Science,  
Faculty of Clinical Science,  
College of Medicine,  
University of Lagos  
Phone No: 08127773528  
E-mail: tososanya@unilag.edu.ng

**VERA ONYINYECHITASIE**

Department of Nursing Science,  
Faculty of Clinical Science,  
College of Medicine,  
University of Lagos  
Phone number: 08092774399  
Email: 160709705@live.unilag.edu.ng

**VICTORIA BOLANLE BROWN**

School of Nursing,  
University College Hospital, Ibadan, Oyo State  
Phone number: 08037272857  
Email: vicbrown2010@gmail.com

**YUNUSA AHMAD**

Department of Nursing Science,  
Ahmadu Bello University, Zaria- Nigeria  
Phone No: 08065954975  
Email: yunusahmad8078@gmail.com

**YUNUSA, U.**

Department of Nursing Science,  
Bayero University,  
Kano State, Nigeria.  
Phone No: +2348038199802  
Email: uyunusa.nur@buk.edu.ng

## TABLE OF CONTENTS

<b>1. Effectiveness Of Family Caregivers Centered Nursing On Knowledge Of Pressure Ulcer Prevention In A Tertiary Health Facility In Kano, Nigeria</b> Idris Abdulrashid; Dalhat Khalid Sani; Abdurrahman Salihu Kombo; Husaini Muhammad Aikawa; & Adamu Dalhatu	1
<b>2. Knowledge Of Health Implications Of Rape And Associated Factors Among Male Undergraduates In Ahmadu Bello University Zaria, Nigeria</b> Musa-Maliki, A. U.; Abdulraheem Amina; Balarabe F.; Sani H. M.; Yunusa U.; Balarabe R.; & Raymond T. L.	9
<b>3. Effect Of Cold Compress On Musculoskeletal Pain, Swelling And Hemarthrosis Among Orthopaedic Patients In Lautech Teaching Hospital, Ogbomosho, Oyo State, Nigeria</b> Bidmus, Lateef Iyanda	16
<b>4. Awareness Of Prostate Cancer Screening Among Male Civil Servants In Egor Local Government Area, Edo State, Nigeria</b> Oyana N. E., Asadu L. Chinenye & Edo-Osagie Chinenyenwa	36
<b>5. Knowledge, Perception And Utilization Of Maternal And Child Health Care Among Women In Ogbomosho, Oyo State, Nigeria</b> Abiodun Funmilayo Layeni & Victoria Bolanle Brown	44
<b>6. Assessment Of Knowledge And Utilization Of Electronic Medical Records Among Nurses In Secondary Health Care Facilities In Jigawa State, Nigeria</b> Salihu A. K.; Auwalu Yusha'u; Abdullahi M.; Sani M. S.; Dalhat K. S.; Hadiza, M. S.; Attahir, I.; Farooq, M. A.; Hayat I. M. Gommaa; Yunusa Ahmad; & Salisu Aliyu	57
<b>7. Effect Of Midwife Led Educational Intervention On Knowledge Of Anaemia And Risk Factors Among Pregnant Women Attending Ante-Natal In Selected Primary Health Care Facilities In Osun State, Nigeria</b> Abioye, Abigail Adebisi; Owopetu, Christiana Adetoun; Sowunmi, Christiana Olanrewaju Adamu-Adedipe Foyekemi. O.; Opatunji Florence Omowunmi; & Afolabi, Adebukunola O.	72
<b>8. Knowledge And Practice Of Malaria Prevention Among Expectant Mothers In Selected Primary Health Centers In Mushin Local Government Area, Lagos State, Nigeria</b> Abosedede Adekunbi Farotimi; Temitope Ebunoluwa Oshinyemi; & Vera Onyinyechi Tasié	85



- 9. Prevalence Of Sexual And Psychological Abuse In Almajiri System Of Education In Zaria Local Government Area, Kaduna State, Nigeria**  
Bature F. U.; Alkali, M. A.; & Nwanneri, A. C. 97
- 10. Assessment Of Male Involvement In Maternity Care In Selected Health Facilities In Ado Ekiti, Ekiti State, Nigeria**  
Gbemisola Bolanle Ogbeye; Folakemi Esther Ayo-Ige; Joel Ojo Aluko & Nifemi Tunrayo Babalola 107
- 11. Educational Intervention On Knowledge Of Prevention And Self-Care Practices Of Selected Lifestyle Diseases Among Civil Servants In State Secretariat Oke-Mosan, Abeokuta Ogun-State, Nigeria**  
Komolafe O. Folasade; Okafor N. Anthonia; & Abaribe E. Chidinma 119
- 12. Nursing In An Age Of Change In Nigeria**  
Agbedia, C.; Aikabeli, P.; & Munge, M. 135
- 13. Knee Replacement Surgery: The Role Of The Nurse In Patient Safety In The Operating Room, The Nigerian Perspective**  
Aikabeli, Priscilla O. & Enunwaonye, Hossanna C. 142
- 14. Choice of Places of Delivery Among Women Attending Ante Natal Clinic At Ngwo Health Centre**  
Eze, Uchechukwu Elias, Eze, Uchenna Augustina & Ndie, Elkenah Chubike 152
- 15. Adolescent Girls' Knowledge And Practice Of Menstrual Hygiene In Nigeria: A Systematic Review**  
Adekemisola R. Jimoh & Elizabeth M. Joseph-Shehu 159
- 16. Knowledge And Prevention Of Hypertension Among Patients Attending Medical Outpatient Department Of Garki Hospital, Abuja, Federal Capital Territory, Nigeria**  
Chinedum I. Ahaiwe; & Oparanma Florence U. 170
- 17. Socio-Cultural Factors Influencing Nutritional Status In Under-Five Children In Akure North Local Government, Ondo State, Nigeria**  
Oyewumi Zaccheus Opeyemi; Akinbowale Busayo Temilola & Oyewumi Lydia Omowumi 181

# ADOLESCENT GIRLS' KNOWLEDGE AND PRACTICE OF MENSTRUAL HYGIENE IN NIGERIA: A SYSTEMATIC REVIEW

ADEKEMISOLA R. JIMOH & ELIZABETH M. JOSEPH-SHEHU

## ABSTRACT

*Menstrual hygiene knowledge and practices are crucial aspects of women's reproductive health. Adequate understanding and proper management during menstruation are essential for maintaining physical well-being, educational engagement, and overall quality of life for adolescent girls and women. This systematic review, conducted following PRISMA guidelines, analysed eleven studies from 2013 to 2023 on menstrual hygiene practices among adolescent girls in Nigeria. Utilizing diverse methodologies such as quasi-experimental designs and cross-sectional research, the findings revealed the impact of peer influence, educational interventions, and knowledge levels on menstrual hygiene practices. However, the study identified critical research gaps, including a lack of exploration into factors contributing to observed disparities, challenges in accessing menstrual hygiene resources, and regional and urban-rural differences. The studies emphasized the importance of knowledge in shaping menstrual practices, a comprehensive understanding of barriers faced by girls in accessing resources remains absent. Addressing these gaps is essential for informed interventions tailored to the diverse contexts of adolescent girls in Nigeria, ensuring a more comprehensive understanding of their menstrual hygiene practices and enhancing overall well-being.*

## INTRODUCTION

Adolescence is a critical period of development during which significant biological, cognitive, and social changes occur. This phase signifies the commencement of adolescence, accompanied by substantial alterations in hormonal concentrations and physical characteristics. (Aylwin et al., 2019). The maturation of reproductive organs, development of secondary sexual characteristics, and the initiation of the

menstrual cycle in females are emblematic of the intricate biological shifts (Peltz et al., 2023). This period, with its social reorienting and evolving priorities, underscores the importance of equipping emerging adults to navigate the complexities of their communities (Bonnie et al., 2019). Adolescence signifies a critical juncture for the maturation of brain processes underpinning higher cognitive functions and emotional behaviour (Tetteh-Quarshie & Risher, 2023). This developmental stage encapsulates a transformative journey, shaping the foundation for nuanced emotional and cognitive development in preparation for adult independence.

Menstruation, a vital aspect of female puberty, marks the onset of reproductive maturity during adolescence. Typically beginning between ages 9 and 16, this monthly menstrual cycle signifies the cyclical shedding of the endometrium under the hormonal influence controlled by the hypothalamic-pituitary axis. Menarche, the onset of the first menstruation, is a singular event within puberty (Farello et al., 2019). The development of secondary sexual characteristics initiates before and continues after the first menses. Beyond its biological significance, menstruation carries profound psychosocial implications. It symbolizes a girl's transition into womanhood, fostering a sense of identity and belonging (Federici et al., 2021). However, alongside this biological milestone, many adolescents experience discomfort, commonly referred to as premenstrual symptoms. These can include physical symptoms like cramps, bloating, and headaches, as well as emotional challenges such as mood swings and irritability. The

hormonal fluctuations that trigger menstruation can impact an adolescent's daily life, affecting their mood, energy levels, and overall well-being (Bozzola et al., 2020).

Menstrual health practices and management are influenced by cultural, socioeconomic, and educational factors. Societal taboos, limited access to menstrual hygiene products, and inadequate sanitation facilities impact women's ability to manage their menstruation effectively. Economic constraints may also hinder the purchase of quality menstrual products (Asumah et al., 2022). Adolescent menstrual hygiene and health are crucial to maintaining their overall well-being during puberty. However, cultural taboos and inadequate education often surround menstruation, contributing to stigma and impacting girls' self-esteem (Berga, 2020). Adequate menstrual health and management are crucial during this time to help adolescents navigate the physical and emotional aspects of menstruation, fostering a positive attitude towards their changing bodies. (Wardana, 2020). These practices encompass utilizing sterile menstrual management products to collect or absorb menstrual blood, which can be replaced privately and frequently throughout the menstrual cycle; cleansing the body when required with soap and water; and having convenient and secure disposal facilities for discarded menstrual management products (Sahiledengle et al., 2022).

The hygiene practices women undertake during menstruation bear significant importance, given their health implications regarding heightened vulnerability to reproductive tract infections (RTI) (Prema et al., 2020). Meitei & Aditi, 2021 stated that millions of women grapple with RTI and its complications, with the infection often transmitted to the offspring of pregnant mothers. Additionally, embracing effective menstrual hygiene practices yields positive impacts on mental health. Access to quality menstrual products and education reduces stigma and empowers women, nurturing a sense of dignity and self-esteem (Adewale, 2023). It further diminishes the likelihood of anxiety or discomfort associated with inadequate

menstrual protection. Menstrual hygiene management is vital to public health, and addressing this issue ensures the well-being and productivity of women, underscoring its significance in achieving broader societal health goals (Critchley et al., 2020).

Menstrual hygiene extends beyond physical health; it profoundly influences education and overall well-being (Wilson et al., 2021). Insufficient menstrual hygiene management acts as a hindrance to girls' education, leading to increased absenteeism and a higher risk of dropout (Mohammed et al., 2020). Research indicates that the challenges girls face in effectively managing their menstrual periods in a school setting contribute to school absenteeism (Basseyy et al., 2021; Sahiledengle et al., 2022). Consequently, this hampers their development and aspirations, imposing significant economic costs on their lives and, by extension, the country. Menstrual hygiene also profoundly influences social and psychological dimensions. Robust menstrual hygiene practices play a pivotal role in mitigating societal stigmas, while access to proper products correlates with diminished psychological distress, enabling women to navigate menstruation with equanimity (van Lonkhuijzen et al., 2023; Wiedermann et al., 2023).

Adolescent girls face numerous challenges related to menstrual health that impact their well-being and daily lives. Physical challenges involve insufficient access to water, sanitation, and hygiene (WASH) facilities and a shortage of quality absorbent materials and disposal options (Sood et al., 2022). Additionally, inadequate privacy, especially in resource-poor settings, further compromises hygiene standards (Watson et al., 2019). Psychosocial barriers, rooted in cultural taboos and stigmas surrounding menstruation, also hinder adolescents from seeking guidance on menstrual hygiene management (MHM) (Basseyy et al., 2021). This leads to poor knowledge, insufficient social support, and instances of teasing, stress, and embarrassment, affecting confidence during menstruation (Hennegan et al., 2019).

Inadequate menstrual hygiene practices have far-reaching consequences, subjecting women to reproductive and urogenital infections, psychosocial stress, and constraining educational and occupational opportunities (Anbesu & Asgedom, 2023). These practices foster the development of morbid conditions, encompassing reproductive and urinary tract infections, along with potential long-term health risks like infertility and cancer (Girigoswami et al., 2023). Knowledge regarding menstrual hygiene proves crucial in averting these adverse effects, as informed women exhibit reduced susceptibility to reproductive tract infections. Poor menstrual hygiene aligns with school absenteeism, withdrawal, reproductive issues, and urinary tract infections, impacting academic performance, self-esteem, and the pursuit of higher education (Belayneh & Mekuriaw, 2019). Beyond physical ramifications, insufficient resources and knowledge contribute to psychological distress among adolescent girls, hampering self-esteem and impeding the development of a positive self-image (Nwimo et al., 2022).

The school environment is pivotal in shaping adolescent girls' knowledge and practice of menstrual hygiene, as evidenced by recent scholarly articles. Educational institutions serve as crucial platforms for disseminating accurate information about menstruation, dispelling myths, and fostering positive attitudes towards menstrual health (Belayneh & Mekuriaw 2019). Comprehensive menstrual hygiene education in schools has been linked to improved awareness, reduced stigma, and enhanced hygienic practices among adolescent girls. A study by Nnennaya et al (2021) highlights the correlation between targeted menstrual education programs in schools and increased menstrual hygiene management among adolescent girls. Additionally, schools provide a supportive environment for the provision of menstrual hygiene products and facilities, ensuring girls' dignity and promoting regular attendance (Deshpande et al., 2018; Shah et al., 2023)

Belayneh & Mekuriaw (2019) revealed inadequate knowledge among adolescent girls about menstruation, leading to unhygienic practices. Aluko et al. (2014) also revealed that majority of adolescent have a good knowledge of menstrual hygiene practices. This finding was contradicted by Fehintola et al. (2017) who stated that despite good knowledge, many adolescents did not observe proper hygienic practices. Edet et al. (2020) also asserted significant disparities in knowledge levels of menstrual hygiene practices among adolescents. Following the disparate findings in existing research, a systematic review on the knowledge and practice of menstrual hygiene among adolescents is crucial. A comprehensive synthesis of these findings can elucidate patterns, identify influencing factors, and highlight research gaps. This review would inform targeted interventions to bridge knowledge gaps and promote consistent, healthy menstrual hygiene practices among adolescents, ultimately contributing to their overall well-being and empowerment.

## **METHODOLOGY**

This study adopted the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines for conducting a systematic review. The search strategy was created after an initial evaluation of adolescent girls' knowledge and practice of menstrual hygiene. Research journals (full texts and abstracts) were located using online databases such as Scopus, Medline, CINAHL, PsycINFO, Cochrane, Google Scholar and Web of Science to retrieved article published between 2013 and 2023. Search terms used in the study included ("Evaluation" OR "Assessment") AND "Knowledge of Menstrual Hygiene Practices" AND "Adolescent Girls". Figure 1 shows the search protocol using the PRISMA method.

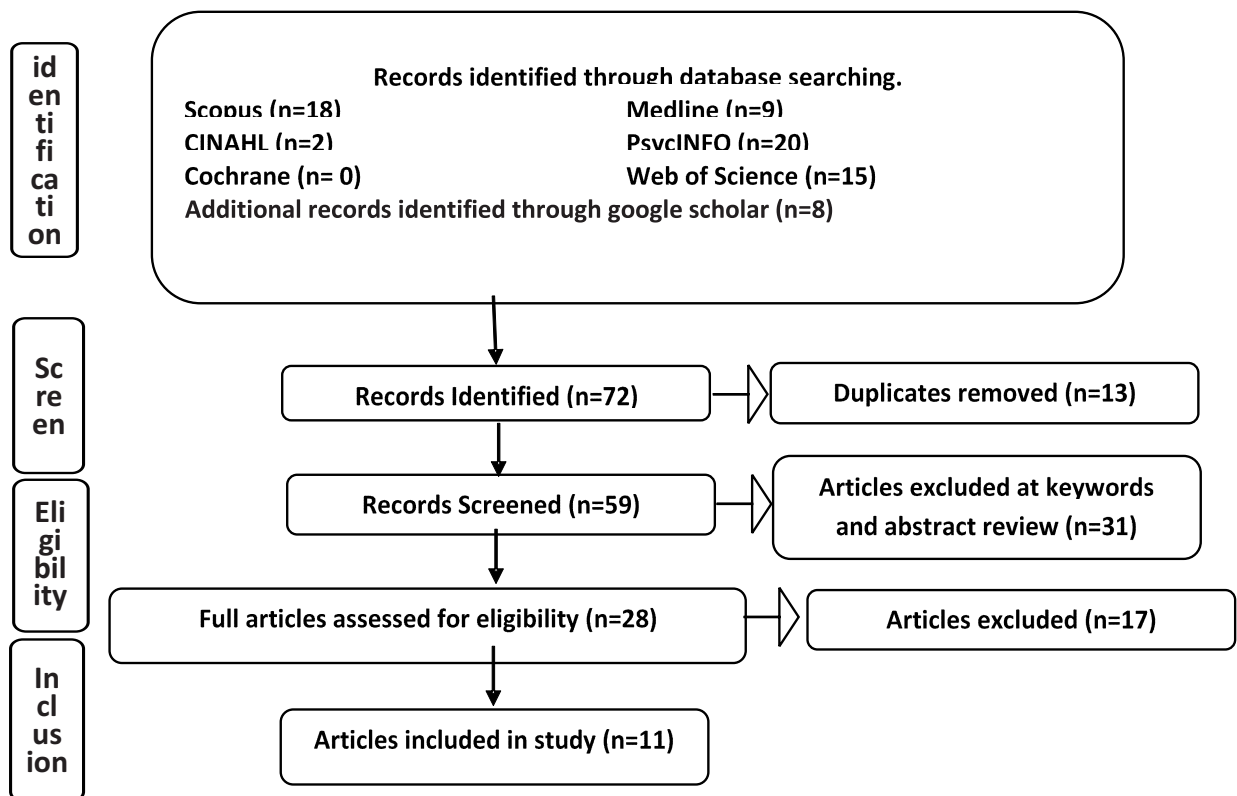
## **Inclusion/Exclusion Criteria**

The following criteria were met by studies included in this review: (1) focused on

assessment of adolescent girls' knowledge and practice of menstrual hygiene between 10- 19 years (2) Peer-reviewed journal articles, conference papers, and reputable scientific sources (3) cross-sectional studies, cohort studies, intervention studies, and qualitative research (4) published between 2013 and 2023 (5) published in English language (6) focused on Nigeria (7) conducted in schools, communities, or healthcare facilities (8) accessible in full text (9) Keywords such as menstrual hygiene, adolescent girls,

knowledge, menstrual hygiene practices, adolescent health, menstrual education, girls' health, menstrual hygiene management, adolescent reproductive health, menstrual health awareness, menstrual education programs, menstrual hygiene interventions, adolescent health education, girls' reproductive health and menstrual hygiene behavior were used for filtering articles during the preliminary screening. Finally, eleven (11) articles were identified for this study.

**Figure 1: Visual presentation of the article selection process.**



**Table 1: Summary of Table for Systematic Review**

Author, year	Methodology	Study population/ participants	Key findings	Research gap
Agbede & Ekeanyanwu (2021)	quasi-experimental design	120 adolescent schoolgirls in Ogun State.	Peer groups, educational interventions, and peer educators have significant impact on adolescent girls' menstrual hygiene practices.	The study did not evaluate the cultural, socio-economic, or regional factors influencing menstrual hygiene practices
Aluko et al (2014)	cross-sectional design	400 adolescent schoolgirls in Ile-Ife	Majority of respondents have good knowledge of menstrual hygiene practices	there is a notable research gap in exploring the underlying factors contributing to the observed disparities of menstrual hygiene practices
Fehintola et al. (2017)	cross-sectional study	447 adolescent school girls in Ogbomosho	The majority of adolescents do not observe good hygienic practice during menstruation despite relatively good knowledge of menstruation and menstrual hygiene	The study did not investigate factors resulting in the poor menstrual hygienic practices.
Okafor-Terver & Chuemchit (2017)	Cross-sectional study	395 Adolescents in Katsina	The study revealed poor menstrual health knowledge and an association between respondents' knowledge, beliefs, enabling factors, and the level of menstrual hygiene practice.	The research may be limited by language and beliefs system different to other regions of the country
Nnennaya et al (2021)	Cross sectional study	297 adolescent school girls	The study identified a significant association between knowledge and good menstrual hygiene management emphasizing the critical role of accurate information in shaping hygiene practices among adolescent girls.	the study did not delve into specific challenges or barriers faced by adolescent girls in accessing sanitary pads and other menstrual hygiene management facilities.
Nwimo et al (2022)	Cross sectional study	600 adolescent school girls in Ebonyi	The study revealed poor menstrual hygiene management practices	There is a research gap in understanding the specific factors

Nwimo et al (2022)	Cross sectional study	600 adolescent school girls in Ebonyi	The study revealed poor menstrual hygiene management practices among adolescent girls, contributing to significant distress levels	There is a research gap in understanding the specific factors contributing to inadequate menstrual hygiene management among adolescent girls, such as cultural influences, education levels, and access to menstrual hygiene resources
Garba et al (2018)	Cross sectional study	219 school girls in Kano	There was good menstrual hygiene among adolescent school girls in Kano, with sanitary pads being the most utilized menstrual absorbent.	The study was restricted to the urban part of the state, while neglecting the rural communities
Edet et al. (2020)	Cross sectional study	1006 students in Cross-rivers	The study reveals a significant urban-rural gap in the knowledge of menstruation and menstrual hygiene, with a higher prevalence of poor knowledge among rural students compared to their urban counterparts.	The study did not indicate the socioeconomic factors responsible for the rural-urban gap in knowledge of menstruation and menstrual hygiene.
Olabanjo et al (2014)	Multistage study	382 adolescent school girls from ile-ife	The study revealed an inadequate knowledge and misconceptions among in - school adolescents regarding menstruation.	The study does not delve into factors associated with differences in knowledge levels between public and private school students.
Rumun & Peter (2014)	Cross sectional study	200 school girls in Markurdi	The study revealed a good practice of menstrual hygiene, with the prevalent use of sanitary pads and regular changing of absorbents among respondents	The study did not investigate factor responsible for the use of reusable cloth by the respondents who indicated it.
Uwadia et al (2022)	Cross sectional study	420 school girls in Badagry	The study revealed inadequacy of basic school WASH services, unconducive environment and poor menstrual hygiene among students	The study did not reveal the contribution of inadequate WASH facilitates to unhealthy menstrual health management.

## RESULTS

This systematic review analysed eleven research conducted from 2013 to 2023, specifically investigating menstrual hygiene practises among adolescent females in Nigeria. The studies differ in their approach, the number of participants, and the places where they were conducted. This provides a detailed overview of the topic and reveals the importance of peer influence, educational interventions, and knowledge levels in altering the menstrual hygiene practises of teenage girls. The evaluated works utilise a variety of techniques, including quasi-experimental designs and cross-sectional research, which offer a combination of qualitative and quantitative insights. The evaluation primarily consisted of cross-sectional research that provided limited insights into the menstrual hygiene practises of adolescent females at distinct moments in time. Most studies depend on data provided by individuals themselves and employ questionnaires to collect information, which restricts the extent of in-depth qualitative investigation.

The subjects in these research investigations consist of adolescent female students hailing from several locations in Nigeria, including Ogun State, Ile-Ife, Ogbomosho, Katsina, Ebonyi, Kano, Cross-Rivers, and Badagry. The sample size varies from 200 to 1006, encompassing a significant portion of the adolescent female population. The collective findings of the studies revealed several themes, including a significant correlation between peer influence, educational interventions, and enhanced menstrual hygiene practises among adolescent girls. Nevertheless, the analysis also highlighted the presence of a significant research gap in comprehending the wider cultural, socio-economic, and regional elements that impact these practises.

## DISCUSSION

Menstrual hygiene has a vital role in the health and well-being of adolescent girls, affecting not only their physical well-being but also their

education and overall quality of life. Several studies revealed emphasised the impact of different factors on the menstrual hygiene practises of adolescent girls. Agbede & Ekeanyanwu (2021) highlighted the beneficial influence of peer groups, educational programmes, and peer educators on the adoption of proper menstrual hygiene practises. Aluko et al. (2014) and Rumun & Peter (2014) both acknowledged the significance of knowledge. Aluko et al. (2014) found that respondents had good knowledge, whereas Rumun & Peter (2014) equated good practises to the widespread usage of sanitary pads and regular change of absorbents.

In contrast, Fehintola et al. (2017), Nwimo et al. (2022), and Uwadia et al. (2022) present disconcerting findings on inadequate menstrual hygiene practises among adolescent females. Fehintola et al. (2017) and Uwadia et al. (2022) established a correlation between substandard practises and insufficient facilities as well as an unsatisfactory environment. Nwimo et al. (2022) emphasise the distress resulting from insufficient practises in managing menstrual hygiene. Edet et al. (2020) discovered a disparity between urban and rural areas in terms of knowledge, where rural students demonstrated less awareness of menstruation and menstrual hygiene compared to their urban peers. Garba et al. (2018) also identified regional differences, specifically observing that urban girls in Kano exhibit satisfactory menstrual hygiene practises. Nevertheless, the study had a restricted scope and failed to consider rural communities.

Nnennaya et al. (2021) emphasised the correlation between knowledge and effective management of menstrual hygiene, underscoring the crucial influence of precise information in changing behaviours among adolescent females. Olabanjo et al. (2014) also revealed that in-school teenagers had insufficient information and have misunderstandings about menstruation. The reviewed studies predominantly focus on knowledge levels and practices of menstrual hygiene among adolescent girls. While the



studies reported varying knowledge of menstrual hygiene practices among respondents, the studies consistently point to a lack of exploration into the underlying factors contributing to the observed disparities in menstrual hygiene practices. This represents a significant research gap in understanding the nuanced dynamics influencing adolescent girls' behaviours during menstruation. Additionally, the utilization of sanitary pads emerged as a common trend, with varying degrees of availability and utilization reported across studies. However, there is a dearth of exploration into specific challenges or barriers faced by adolescent girls in accessing sanitary pads and other menstrual hygiene management facilities as some girls reportedly still used clothes as absorbent materials.

The studies also highlight the importance of knowledge in shaping menstrual hygiene practices. Notably, Nnennaya et al. (2021) emphasize the critical role of accurate information in promoting good menstrual hygiene management among adolescent girls. Nonetheless, a comprehensive examination of the challenges and barriers faced by girls in accessing menstrual hygiene resources and information is notably absent. Garba et al. (2018) and Edet et al. (2020) revealed regional and urban-rural disparities in menstrual hygiene practices but left gaps in understanding the unique challenges faced by rural communities or advantages of urban communities. This is similar to the findings of Olabanjo et al. (2014), who revealed differences in knowledge levels between public and private school students. It is therefore important to investigate the unique features of rural-urban communities as well as public-private schools to establish a causal association in the menstrual hygiene practices. While the reviewed studies contribute valuable insights, these notable research gaps must be addressed to form a more comprehensive understanding of menstrual hygiene practices among adolescent girls.

## CONCLUSION

The study revealed varying knowledge of menstrual hygiene practices and underscored the influence of peer dynamics, educational interventions, and knowledge levels on menstrual hygiene practices. The study revealed research gaps in the lack of exploration into the underlying factors contributing to observed disparities in menstrual hygiene practices, the challenges and barriers faced by adolescent girls in accessing menstrual hygiene resources and regional and urban-rural disparities. Addressing these gaps is crucial for a more comprehensive understanding of adolescent girls' menstrual hygiene practices and for informing targeted interventions tailored to the adolescent population across Nigeria.

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