Original

Awareness of Preventive Practices on Childhood Killer Diseases Among Child Bearing Women in Ido-Osi Local Government Area, Southwest, Nigeria

[1,2]Opeyemi Oladipupo Abioye, [2]Richard Dele Agbana, [1,2]John Olujide Ojo, [2,3]Ademuyiwa Adetona, [4]Mojoyinola Oyindamola Adeosun, [2]Serifat Asabi Babalola, [5]Vivian Somtoochukwu Ibezim, [1]Samuel Idowu Omotoso, [1]Olaoye Michael Faleke, [3]Ayotunde Abdulhakeem Isiaka, [3]Oluwakanyinsola Abimbola Falana, [3]Bolatito Joannah Akande, [3]Deborah Adaeze Ineh-Dumbi, [3]Amen Kari Ugbaka

[1]Department of Community Medicine, Federal Teaching Hospital, Ido-Ekiti, Nigeria
[2] Department of Community Medicine, Afe Babalola University, Ado-Ekiti, Nigeria
[3] College of Medicine, Afe Babalola University, Ado-Ekiti, Nigeria
[4] Ekiti State University, Ado-Ekiti, Nigeria
[5] Department of Public Health, Swansea University, Wales, United Kingdom

Corresponding author: Opeyemi Oladipupo Abioye, Department of Community Medicine, Federal Teaching Hospital, Ido-Ekiti, Nigeria.yabioye@yahoo.com:+234 8036163684
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Abstract

Background: Nigeria has one of the highest under-five mortality rates in the world, with almost 750,000 children under five dying each year. Unawareness and ignorance among mothers about various childhood killer diseases including malaria, diarrhea, among others may contribute a great deal to childhood mortality and morbidity. This study aimed to identify level of awareness of preventive practices on childhood killer diseases among childbearing women.

Methods: The study was a cross-sectional study conducted in Ido-Osi Local Government Area, Ekiti State. Statistical Package for Social Sciences (SPSS) version 26 was used for data analysis, p-value was set at 0.05. A sample size of 295 was calculated, self-administered questionnaire was used to collect data among child bearing women via a multistage sampling technique.

Results: All (100%) of respondents were aware of one or more childhood killer diseases. A total of 77.9% (226) engaged in preventive practices. Awareness among childbearing mothers on childhood killer diseases and the portion of respondents that engaged in good preventive practice was high. Associated factors with good preventive practices include age group, level of education, occupation and income. Age greater than 35 years (AOR: 3.781, 95%CI: 1.344 – 10.639, P: 0.012), and having tertiary education (AOR: 20.703, 95%CI: 3.258 – 131.551, P<0.001) were predictors of good preventive practices.

Conclusion: Awareness of childhood killer diseases among childbearing mothers was impressively high. Factors associated with good preventive practices included age group, educational level, occupation, and income. Health workers should sustain and strengthen ongoing efforts aimed at promoting prevention of childhood killer diseases.

Keywords: Childhood, Diseases, Awareness, Preventive, Practices

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INTRODUCTION

Nigeria, Africa's most populous country, is home to almost 32 million children under five. With a national under-five mortality rate of 109 deaths per 1000 live births, Nigeria has one of the highest under-five mortality rates in the world, with almost 750,000 children under five dying each year.[1] More than two-thirds of all postpartum infant deaths are caused by pneumonia, malaria, and diarrhoea, making them the three main causes of mortality among this special age group.[1,2]

Diarrhoea, malaria, meningitis, and pneumonia (DMMP) are the four preventable/curable illnesses that account for two-thirds of Nigeria's children's fatalities. The attitudes of the community and the behaviours of carers towards these illnesses that kill children are howeever not well recorded.[3] According to a mathematical model that examined the burden of childhood tuberculosis (TB) in 22 high-burden nations, the incidence of paediatric tuberculosis is higher than the number of notifications, especially for young children.[4]

Unawareness and ignorance among mothers about the six killer illnesses—diphtheria, pertussis, TB, measles, tetanus, and polio—are the main causes of the high burden of killer diseases in India.[5] An enormous opportunity for preventive treatment is suggested by estimates of cumulative infection and current household exposure.[4] Numerous national and international initiatives have been undertaken to address this public health issue. Since the year 2000, the Nigerian government and several partners have made significant investments in programs related to maternal, newborn, and child health care. These initiatives include the National Malaria Control Program, the Save One Million Lives Program, the Integrated Maternal, Newborn, and Child Health Program, the Midwives Service Scheme, and extensive vaccination programs, to name a few.[3] Various home-front caregivers also provide care that complement these governmental initiatives in many communities. According to a research conducted among parents in Ebonyi State, Nigeria, mothers are the major carers for children, handling daily feeding and child care duties.[1] When a childbearing woman or mother is fully aware of a preventable disease or condition, she may be prone to preventing the disease before causing harm.[2] Implicating that she is likely to succeed in preventing the manifestation of such disease in her child by frequent practice of scientifically based behavioural life styles against such on daily basis.[2,3] There are several preventive practices against many of the childhood killer diseases that have been proven to be highly effective over the years. Among these include; frequent hand washing with soap and water, consumption of safe and potable water, avoidance or minimal use of feeding bottles.[3,5] Furthermore, uptake of childhood vaccine against killer diseases, living in a cross ventilated room and avoiding over crowded room, proper child nutrition with balanced diet, sleeping under insecticide treated net, ensuring food safety and food hygiene, house door and window screening using nets against mosquitoes and flies, can be very helpful against killer diseases.[3,5] Every mother or caregiver must be sensitized and encouraged on such practices to limit the cost of hospital care, and childhood mortality among the under 5 children (U5MR). Such preventive practices among caregivers are very crucial for child survival, and imperative for the protection of child health at various levels of existence.

This study aimed to identify the level of awareness on childhood killer diseases, and also how various preventive practices on childhood killer diseases among women of childbearing age are being executed. Childhood killer diseases of study were malaria, measles, pneumonia, TB, and diarrhoea.

METHODOLOGY

The study was conducted in Ido-Osi Local Government area which is a local government in Ido-Ekiti town in Ekiti state. There are three health care facilities in Ido-Ekiti namely; Basic Health Centre, Comprehensive Health Centre and Federal Teaching Hospital, Ido-Ekiti. Yoruba tribe is the predominant tribe, while Christianity is the predominant religion practiced in the town.[6] The 2006 population census put the population of Ido-Osi local government area at 160,001, while the projected population as at the year 2020 is 185,427.[7] The major occupations of the people in Ido-Ekiti include farming, trading, teaching and government employment.[6,8]

The study was a cross-sectional study design conducted among childbearing women in Ido-Osi local government area, Ekiti State, South West Nigeria. The study population involved all childbearing women in Ido-Osi local government area. Childbearing being all women aged 15-49 years according to the World Health Organization.[9]

Inclusion criteria included all the childbearing women who were willing to participate in the study in Ido-Osi Local Government Area, while exclusion criteria included severely ill childbearing women, also

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childbearing women that do not reside in Ido-Osi Local Government Area.

Using the Leslie Fischer's formula, the sample size was determined as follows: n= $Z^2pq\ /d^2$.[10]

Where n = Desired sample size, Z = Standard normal deviate = 1.96, p = Prevalence rate=22.5%,[11] = 0.225 and q=1-p = 1-0.225=0.775, d = Margin of error = 0.05. Therefore, n = 267.9

Nonresponse rate was placed a 10% of the total sample size = 26.7

Sample size + nonresponse =267.95+26.7 = 294.65.

Therefore, the total sample size for this study was 295.

A multistage sampling technique was used to select eligible research participants from the three health care service delivery centers located within Ido-Ekiti town. First Stage involved selection of wards where six wards out of eleven wards in Ido-Osi L.G.A were selected through simple random sampling using the balloting method, namely: Ifaki I, Ifaki II, Igbole, Ilogbo, Usi, Ayetoro I. Stage two comprised selection of settlements, as six settlements were selected through simple random sampling via balloting (a settlement per ward) from the list of settlements in the selected wards. Households were selected in the third stage using systematic random sampling technique. The first household was selected by tossing a coin, and a sample interval of two was used. The last stage involved final selection of respondents that met the inclusion criteria (all childbearing woman aged 18years above living in Ido-Osi local government area) from each household using simple random technique by balloting.

A semi structured self-administered questionnaire was used for data collection between May and November, year 2022. Data collected was checked for completeness, edited, coded and entered into the Statistical Package for Social Sciences (SPSS) version 26 software for analysis. P-value set at 0.05.

Ethical clearance certificate was obtained from the Ethics and Research Committee of the Federal Teaching Hospital Ido-Ekiti with protocol number ERC/2022/10/06/853B before commencement of the research. The objectives were clearly explained to the participants who were childbearing women, and written informed consent was obtained from the subjects by allowing them to append their signatures or thumb prints on the consent form. Subsequently, the questionnaires were administered to the subjects individually, and all the records were accessed only by authorized personnel. Voluntary participation and confidentiality were ensured all through the study period.

RESULTS

The response rate was 98.3%, majority 72.1% of the subjects were lower than 35 years. Mean age of respondents in this study was 29.8 ± 7.0 years as shown in Table1 which displays the socio-demographic characteristics of the respondents, including age, marital status, religion, tribe, and level of education, more than half (54.5%) were married.

Table1: Socio-demographic characteristics of respondents

Variable	Frequency N = 290	Percent (%)
Age group (in years)		
<35	209	72.1
≥ 35	81	27.9
Mean age ± SD	29.8 ± 7.0	
Range (Min. – Max.)	18 – 47	
Marital Status		
Single	123	42.4
Married	158	54.5
Widowed	7	2.4
Divorced	2	0.7
Religion		
Christianity	239	82.4
Islam	43	14.8
Others	8	2.8
Tribe		
Yoruba	195	67.2
Igbo	49	16.9
Hausa	10	3.4
Others		
Level of Education		
No formal	11	3.8
Primary	20	6.9
Secondary	53	18.3
Tertiary	206	71.0

Table 2 shows the source of awareness of childhood killer diseases among the respondents. When asked whether they were aware of conditions called childhood killer diseases, a total 290 of our 290 respondents (100%) responded yes in the affirmative. Substantial 97.9% were aware of malaria, while 94.8% were aware of diarrhoea, but 93.4%, 93.4%, 93.1% were aware of measles, pneumonia, and tuberculosis respectively.

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Concerning the source(s) of awareness, 94.8% reported that while engaging the social media, they became aware of childhood killer diseases, a tangible 92.8% among the respondents declared that they got their awareness about childhood killer diseases from the hospital settings while accessing care.

Table 2: Awareness of childhood killer diseases among respondents

Variable	Frequency N = 290	Percent (%)
Awareness of childhood killer Disease		
Yes	290	100.0
The one(s) aware of*		
Malaria	284	97.9
Pneumonia	271	93.4
Tuberculosis	270	93.1
Measles	273	93.4
Diarrhoea	275	94.8
Source (s) of awareness of childhood killer disease*		
Internet/TV/ Radio	275	94.8
Hospital	269	92.8
Books	69	23.8
Conference/ Seminar	36	12.4
Family/ friends	96	33.1
Others	9	3.1

**Multiple responses*

Table 3 shows preventive practices against childhood killer diseases (malaria and measles). On the preventive practices against malaria, 94.1% of respondents visited health center when they or their family members got sick. Also, 90.7% among them slept under insecticide treated mosquito net, and similar 90.7% of research subjects drained stagnant water around their residence, as well-cut bushes around the house. Around 90% of the respondents used mosquito repellent and wore covered clothing for protection. While on preventive practices against measles, just 9.0% did not engage in exclusive breastfeeding. About 90% among the respondents received appropriate vaccine for child's age, and 88.6% prevented contact between affected child and another child, also 84.5% washed their hands with soap under running water, 92.4% visited the clinic when their child got sick, and 63.8% gave vitamin A to their children.

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Table 3: Preventive Practices against childhood killer diseases (Malaria and Measles)

Preventive Practices	Yes n (%)	No n (%)	Don't know n (%)
Preventive Practice against Malaria			
Visit health center/clinic when you or your family members get sick	273 (94.1)	6 (2.1)	11 (3.8)
Sleep under insecticide-treated mosquito net	263 (90.7)	15 (5.2)	12 (4.1)
Draining stagnant water or moist areas around their residence and cut bushes around the house	263 (90.7)	8 (2.8)	19 (6.5)
Use mosquito repellent and wearing covered clothing	261 (90.0)	22 (7.6)	7 (2.4)
Preventive Practice against Measles			
Exclusive breastfeeding	192 (66.2)	26 (9.0)	72 (24.8)
Washing of hands with soap under running water	245 (84.5)	29 (10.0)	16 (5.5)
Appropriate vaccine for child's age	261 (90.0)	15 (5.2)	14 (4.8)
Visiting a clinic when your child gets sick	268 (92.4)	17 (5.9)	5 (1.7)
Giving vitamin A	185 (63.8)	21 (7.2)	84 (29.0)
Avoiding overcrowding	221 (76.2)	26 (9.0)	43 (14.8)
Prevent contact of affected child with another child	257 (88.6)	15 (5.2)	18 (6.2)

On preventive practices against childhood killer diseases comprising pneumonia, TB and diarrhoea, table 4 displays 89.3% completed immunization for their child's age. Around 88.3% practiced proper hand and food hygiene, while 79.0% encouraged and practiced living inside a room with cross ventilation. Around 74.5% received pneumococcal vaccine against pneumonia. On assessment of preventive practices against tuberculosis; 5.2% did not provide good nutrition, and 87.9% among respondents practiced proper covering of the mouth while coughing, while 88.6% vaccinated their children against TB, unlike just 85.2% that avoided overcrowding. Activities practiced against diarrhoea diseases include: proper routine hand washing among 93.4% of respondents, just an average 54.5% avoided the use of feeding bottles. Impressive 86.6% practiced exclusive breastfeeding, while majority 93.8% ensured proper sterilization of cup and spoon used for their children, 79.7% avoided patronization of food vendors.

Table 4: Preventive Practices against childhood killer diseases (Pneumonia, Tuberculosis and Diarrhoea)

Preventive Practices	Yes n (%)	No n (%)	Don't know n (%)
Preventive Practice against Pneumonia			
Complete immunization according to the child's age	259 (89.3)	12 (4.1)	19 (6.6)
Close all the windows	115 (39.7)	163 (56.2)	12 (4.1)
Practice proper hand and food hygiene	256 (88.3)	21 (7.2)	13 (4.5)
Encourage and practice cross ventilation	229 (79.0)	29 (10.0)	32 (11.0)
Reduce day care attendance	151 (52.1)	89 (30.7)	50 (17.2)
Pneumococcal vaccination	216 (74.5)	19 (6.5)	55 (19.0)
Preventive Practice against TB			
Avoid shaking hands	162 (55.9)	71 (24.5)	57 (19.6)
Covering mouth	255 (87.9)	14 (4.8)	21 (7.3)
Avoid sharing cup	228 (78.6)	27 (9.3)	35 (12.1)
Good nutrition	253 (87.2)	15 (5.2)	22 (7.6)
Childhood immunization	257 (88.6)	9 (3.1)	24 (8.3)
Proper covering of mouth while coughing	260 (89.6)	15 (5.2)	15 (5.2)
Avoid overcrowding	247 (85.2)	14 (4.8)	29 (10.0)
Preventive Practice against Diarrhoea			
Proper routine washing	271 (93.4)	9 (3.1)	10 (3.4)
Avoid feeding bottles	158 (54.5)	71 (24.5)	61 (21.0)
Ensure exclusive breastfeeding	251 (86.6)	8 (2.8)	31 (10.7)
Proper sterilization of cup and spoon used for the Child	272 (93.8)	12 (4.1)	6 (2.1)

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Avoid patronizing food vendors	231 (79.7)	40 (13.8)	19 (6.5)

Table 5 displays overall assessment of respondents' preventive practices against childhood killer diseases where a total 77.9% engaged in good preventive practices against childhood killer diseases compared with just 22.1% that had poor practice response.

Table 5: Overall assessment of respondents' preventive practices against childhood killer diseases

Variable	Frequency N = 290	Percentage (%)
Preventive Practices towards Childhood Killer Diseases		
Good (≥70%)	226	77.9
Poor (<70%)	64	22.1

The relationship between socio-demographic characteristics of respondents and their level preventive practices is arrayed on table 6. As statistically significant relationships at 0.05 level were established in this study between level of preventive practices and age (p= 0.002), level of education (p< 0.001), occupation (p= 0.023) and estimated daily income (p= 0.019). However, marital status (0.576), religion (p= 0.190), tribe (p= 0.158) were found not to be statistically significant.

Table 6: Relationships between respondents' socio-demographic characteristics and their levels of preventive practices

Variable	Level of Preventive Practices		Chi square	p-value
	Good - n (%)	Poor - n (%)		
Age group (in years)			9.715	0.002
<35	153 (73.2)	56 (26.8)		
≥ 35	73 (90.1)	8 (9.9)		
Marital Status			1.982	0.576
Single	99 (80.5)	38 (24.1)		
Married	120 (75.9)	38 (24.1)		
Widowed	6 (85.7)	1 (14.3)		
Divorced	1 (50.0)	1 (50.0)		
Religion			3.322	0.190
Christianity	191 (79.9)	48 (20.1)		
Islam	30 (69.8)	13 (30.2)		
Others	5 (62.5)	3 (37.5)		
Tribe			5.189	0.158
Yoruba	156 (80.0)	39 (20.0)		
Igbo	37 (75.5)	12 (24.5)		
Hausa	5 (50.0)	5 (50.0)		
Others	28 (77.8)	8 (22.2)		
Level of Education			22.750	<0.001
No formal	4 (36.4)	7 (63.6)		
Primary	14 (70.0)	6 (30.0)		
Secondary	34 (64.2)	19 (35.8)		
Tertiary	174 (84.5)	32 (15.5)		
Occupation			7.530	0.023
Unemployed	30 (63.8)	17 (36.2)		
Self-employed	125 (82.8)	26 (17.2)		
Civil/ Public Servant	71 (77.2)	21 (22.8)		
Income			5.528	0.019
<2,500naira per day	67 (69.8)	29 (30.2)		
≥2500naira per day	159 (82.0)	35 (18.0)		

The predictors (table 7) of good preventive practices among the childbearing women include: age greater than 35 as respondents older than 35 years were 3.7times more likely to carry out good preventive practice against killer diseases

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(AOR: 3.781, 95%CI: 1.344 – 10.639, P: 0.012); childbearing women having tertiary education were 21times more likely to practice good preventive activities against childhood killer diseases (AOR: 20.703, 95%CI :3.258 – 131.551, P<0.001); occupation and income of respondents were not statistically significant.

Table 7: Binary logistic regression for the significant predictors of good preventive practices among respondents

Variable	AOR	95% Confidence Interval		p-value
		Lower	Upper	
Age group (in years)				
<35 (ref)	1.000			
≥ 35	3.781	1.344	10.639	**0.012**
Level of Education				
No formal (ref)	1.000			
Primary	6.485	0.705	59.642	0.099
Secondary	6.227	0.886	43.642	0.066
Tertiary	20.703	3.258	131.551	**0.001**
Occupation				
Unemployed (ref)	1.000			
Self-employed	3.748	0.785	11.174	0.087
Civil/ Public Servant	1.645	0.464	5.838	0.441
Income				
<2,500 naira per day (ref)	1.000			
≥2,500per day	1.836	0.351	3.988	0.684

AOR- Adjusted Odd Ratio, ref –reference value

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DISCUSSION

This study showed that majority of the respondents were lower than 35 years age, this is consistent with the standard obstetric recommendation that getting pregnant at age lower than 35years carry lesser risks than older age group and may subsequently promote healthy fetal outcomes in the general populace. This finding depicted that many of the respondents had lower risks of giving birth to children with congenital abnormalities as the mothers got pregnant before age of 35years. It is therefore important that child bearing women be encouraged by health practitioners to get pregnant at a younger age when probabilities of congenital anomalies in the child are minimal.[12] Negative neonatal and childhood outcomes are more likely to occur among nulliparous women under the age of eighteen, according to a study that included data from 14 cohort studies.[13] There must be a balanced approach to the appropriate age when a woman can conceive a child, give birth, and also nurture the child to adult hood. Dangers associated with extremes of age and child survival are surely unpalatable, health care givers must give the right counsel at the right time to the health seeking woman at every opportunity.

The level of awareness on childhood killer diseases among respondents was absolutely high in this study (100%), this high level of awareness on the subject in Ido-Osi local government could have resulted from cumulative efforts on the part of health care worker over the years against childhood killer diseases. Contrary to the finding in Ido-Osi, a study done in Benin city where awareness on pneumonia among child bearing women was just slightly above average.[14] This disparity on awareness might have been influenced by the level of campaign against pneumonia at the community level by the primary health care workers, mothers' level of education and antenatal care attendance in certified hospitals. Another study in Nsukka, one of the towns in eastern part of Nigeria discovered that poor perception of messages on childhood killer diseases among caregivers via broadcast media was a clog in the actualization of campaign objectives.[15] Messages targeted at the public must be simple and sensitive to the local culture per time to achieve optimal awareness, behavioural change and positive health outcome. Even with high quality campaigns in the community against any disease, public health experts must work on the perception of respondents to achieve tangible awareness and positive disposition on their way to self-efficacy.

This study showed that 93.4% of the respondents practiced regular hand washing habit as a preventive practice against diarrhoea, which was dissimilar from a study carried out in eastern Ethiopia where most persons did not practice hand washing among mothers due to unavailability of hand washing facilities.[11] Another study in Ethiopia recorded good practice of hand washing in northwest area to be 52.8%.[16] Such lower level of hand washing practice can be improved by provision of potable water by the local government administrators to the community members especially in communities where clean and potable water has been found to be lacking. In addition, intensive health education of childbearing mothers on hand hygiene must be at the fore front to combat the burden of diarrhoea diseases. On breastfeeding practice, 86.6% of the child bearing women practiced exclusive breast feeding against pneumonia, TB, and diarrhoea, this practice was found to improve survival and better child outcomes in India.[17] A study done in a rural community of Ise-Orun, south west Nigeria found out that majority (85.5%) of mothers carried out good preventive practices like sleeping under insecticide treated nets, draining stagnant water, and environmental sanitation against malaria.[18] This is similar to our finding in Ido-Ekiti where many child bearing women did likewise. Consistency on such practices among the general populace in many African communities would help attain global targets on disease elimination.

Higher level of education, especially tertiary education among the respondents in this study predicted good preventive practice by 21 folds, this finding is contrary to a study done in Greece that showed a negative correlation between maternal education and practices on child oral wellbeing.[19] Another study in Italy discovered that maternal education and socio-economic status may influence uptake of vaccination for their children.[20] According to a Ghanaian research, factors like mother's age and education, child sex, area of residence, and children aged 6 to 35months were shown to be predictive of diarrhoea among children under five.[21] Health policy actors must put into cognizance such predictors in order to reduce the burden of childhood killer diseases in similar communities among the African people. Though care seeking decisions has been found not to follow a linear process,[1] care givers including fathers are expected to be dutiful in taking care of their

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symptomatic children at all times irrespective of the preventive practices mounted against killer diseases.

Limitations

Temporality could not be ascertained by this research structure as it was a cross-sectional study designed to assess awareness and practice.

Implications

Primary health care workers should maintain efforts on effective campaign against the killer diseases (Malaria, diarrhea, measles, pneumonia, and TB) assessed in this study especially in situations that give opportunity to educate pregnant women, and women of childbearing age.

Women attending antenatal clinics in various centers at primary, secondary, and tertiary levels of care must be continuously reminded and taught of several scientifically sound practices available against various childhood killer diseases.

CONCLUSION

Awareness of childhood killer diseases among childbearing mothers was impressively high. Similarly, a large proportion of respondents demonstrated good preventive practices against these diseases. Factors associated with good preventive practices included age group, educational level, occupation, and income. Women with age greater than 35 years and having tertiary education were found to be predictors of good preventive practice against childhood killer diseases.

Declaration of Competing Interest: The authors declare that they have no known competing financial interests or personal relationships that could have tampered with the originality of the work reported in this paper.

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