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Judul : Hubungan pengetahuan dan sikap ibu terhadapa imunisasi pada anak usia 0-1 tahun

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Lampiran 2

ORIGINAL ARTICLE

PENGETAHUAN DAN SIKAP IBU TENTANG IMUNISASI DASAR PADA BALITA

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ABSTRAK

Penyakit infeksi masih menjadi salah satu penyebab kematian pada bayi dan anak, padahal pemerintah Indonesia telah menggalakkan program imunisasi untuk mencegah penyakit infeksi yang dapat berakibat fatal seperti TBC dan difteri. Penelitian ini bertujuan untuk mengetahui pengetahuan dan sikap ibu balita terhadap imunisasi dasar serta kelengkapan imunisasi dasar balita pada saat usia 0-9 bulan di Kelurahan Kalirejo, Kecamatan Lawang, Malang, Jawa Timur pada September 2019. Penelitian ini menggunakan metode deskriptif analitik dengan desain studi *cross sectional.* Kriteria responden adalah ibu yang memiliki anak usia dibawah 5 tahun. Dari 91 responden diketahui 64 (70,3%) responden berpengetahuan baik dan 92,4% bersikap mendukung pelaksanaan imunisasi dasar. Dari penelitian ini diketahui bahwa 94 (92,2%) balita telah melakukan imunisasi dasar secara lengkap dan 8 (7,8%) sisanya belum melaksanakan imunisasi dengan lengkap.

Kata kunci: *Kelengkapan imunisasi dasar, pengetahuan, sikap*

ABSTRACT

Infectious disease still become one of the causes of death in infant and pediatric, even though Indonesian government has provided the immunization program for children. The aim of this study was to determine the knowledge and attitudes of mothers towards basic immunization and completeness of basic immunization for infants at the age of 0-9 months in Kalirejo District, Lawang, Malang. This study designed as a cross sectional study using descriptive analytic methods. All mothers with children under 5 years old were approached to participate in the study. There were 91 respondents agreed to participate and 64 (70.3%) of them had good knowledge about basic immunization. About 92.4% participants supports the implementation of basic immunization. From this study, it is known that 94 (92.2%) toddlers have had a complete basic immunization and the remaining 8 (7.8%) have not done a complete immunization.

Keywords: *basic immunization completeness, knowledge*

PENDAHULUAN

Derajat kesehatan masyarakat sebuah negara ditentukan oleh beberapa indikator. Indikator tersebut diantaranya Angka Kematian Ibu (AKI) dan Angka Kematian Bayi (AKB). Berdasarkan Survei Demografi dan Kesehatan Indonesia (SDKI) tahun 2012 menunjukkan bahwa AKI sebesar 359 per 100.000 kelahiran hidup, sedangkan AKB sebesar 32 per 1.000 kelahiran hidup (infoDATIN, 2018). Menurut Kementerian Kesehatan Republik Indonesia, faktor penyebab kematian pada bayi terbanyak antara lain berat bayi lahir rendah, asfiksia, diare, dan pneumonia serta beberapa penyakit infeksi lainnya yang dapat dicegah dengan imunisasi (Depkes, 2018).

Berdasarkan data yang diperoleh dari Riskesdas pada tahun 2013, di Provinsi Jawa Timur diperoleh 74,5% anak umur 12-23 bulan telah melakukan imunisasi lengkap, 21,7% imunisasinya tidak lengkap dan 3,7% tidak melakukan imunisasi (Riskesdas, 2013). Imunisasi dasar lengkap yang diprogramkan oleh pemerintah terdiri dari 1 dosis BCG, 3 dosis DPT, 4 dosis polio, 3 dosis hepatitis B, dan 1 dosis campak (Depkes, 2018). Ketidaklengkapan imunisasi ini dapat disebabkan oleh beberapa hal antara lain, polemik mengenai halal-haramnya vaksin, efek samping vaksin (Anastasia, 2018), dan tersebarnya isu mengenai vaksin palsu yang menyebabkan keresahan pada masyarakat (BBC, 2018)

Imunisasi memiliki peranan penting untuk meningkatkan kualitas kesehatan pada anak. Oleh karena itu, orang tua harus memperhatikan kebutuhan imunisasi anak, begitupula dengan tenaga kesehatan termasuk apoteker. Maka dari itu, dilakukan penelitian mengenai pengetahuan dan sikap ibu terhadap imunisasi dasar pada bayi di Kelurahan Kalirejo. Hasil penelitian ini diharapkan dapat mendasari tenaga kesehatan dalam pemberian edukasi guna meningkatkan kesadaran masyarakat akan pentingnya imunisasi dasar lengkap.

METODE PENELITIAN

Penelitian ini menggunakan metode *survey* dengan desain studi *cross sectional*. Pada penelitian ini populasi yang digunakan adalah ibu yang memiliki balita yang bertempat tinggal di wilayah Kelurahan Kalirejo, Kecamatan Lawang, Kabupaten Malang yang dilakukan pada September 2019. Pengambilan sampel dilakukan dengan metode *non probability sampling* yaitu secara *purposive sampling*.

Kriteria inklusi responden adalah ibu yang memiliki anak berusia 0-5 tahun, bersedia menjadi responden dan dapat berkomunikasi dengan baik, sedangkan kriteria eksklusi adalah responden yang tidak bisa ditemui saat pengambilan data.

Ibu-ibu yang memiliki balita sebagai responden penelitian ini sebanyak 91 orang. Pengumpulan data dilakukan dengan menggunakan kuisioner dan observasi/telaah buku KIA. Kuesioner berisi usia dan pekerjaan orang tua balita serta pendapatan keluarga balita; usia balita dan pemberian imunisasi dasar; pertanyaan pengetahuan mengenai imunisasi; serta pertanyaan mengenai sikap responden terhadap imunisasi. Untuk menilai pengetahuan mengenai imunisasi responden, dilakukan dengan sistem skoring. Pada jawaban benar diberi nilai 1, sedangkan pada jawaban salah atau tidak tahu diberi nilai 0. Penilaian sikap responden mengenai imunisasi dilakukan dengan skoring jawaban "ya" diberi nilai 1, jawaban "ragu-ragu" dan "tidak" diberi nilai 0. Observasi atau telaah buku KIA digunakan untuk mengetahui kelengkapan imunisasi balita.

Pada penelitian ini untuk menentukan apakah seorang balita telah mendapatkan imunisasi dasar secara lengkap (saat usia 0-9 bulan) mengacu pada Buku KIA terbitan Kemenkes pada tahun 2016 dengan rincian seperti yang tercantum pada Tabel 1.

Tabel 1. *Timeline* imunisasi dasar lengkap

Vaksin	Usia (Bulan)								
	0	1	2	3	4	5	6	7	8	9
HB-0 (0-7 Bulan)	√									
BCG	√	√								
Polio	√	√								
DPT-HB-Hib 1			√							
Polio 2			√							
DPT-HB-Hib 2				√						
Polio 3				√						
DPT–HB-Hib 3					√					
Polio 4					√					
IPV					√					
Campak										√

HASIL DAN PEMBAHASAN

Karakteristik Responden

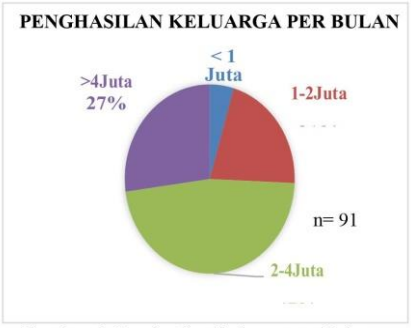
Dari Tabel 2 diketahui bahwa mayoritas kedua orang tua balita berusia 26-35 tahun. Lebih dari setengah responden (n=51) hanya sebagai ibu rumah tangga dan 76 dari 91 suami mereka bekerja sebagai wiraswasta. Sebagian besar pendidikan ayah dan ibu berada pada tingkat menengah yaitu SMA sebanyak 61,8% untuk ayah dan 58,8% untuk ibu. Tingkat pendidikan dapat mempengaruhi wawasan berpikir atau merespon pengetahuan yang ada di sekitarnya. Tingkat pendidikan yang semakin tinggi maka semakin besar peluang untuk mendapatkan informasi yang lebih baik tentang pencegahan penyakit dan mempunyai kesadaran lebih tinggi terhadap masalah-masalah kesehatan. Dengan pengetahuan seseorang dapat melakukan perubahan-perubahan sehingga tingkah lakunya dapat berkembang (Rizani, 2009).

Tabel 2. Karakteristik orang tua balita

Karakteristik			n (%)
Usia(Tahun)	Ayah	17-25	4(4,4)
		26-35	46(50,6)
		36-45	34(37,4)
		46-55	7(7,7)
	Ibu	17-25	13(14,3)
		26-35	57(62,6)
		36-45	21(23,7)
		4 6 - 5 5	0 (0,0)
Pendidikan	Ayah	SD	2(2,0)
		SMP	7(6,9)
		SMA	63(61,8)
		Perguruan Tinggi	30(29,4)
	Ibu	SD	0(0,0)
		SMP	8(7,8)
		SMA	60(58,8)
		Perguruan Tinggi	34(33,3)
Pekerjaan	Ayah	Wiraswasta	76(83,5)
		TNI	6(6,6)
		Lainnya *	9 (9,9)
	Ibu	Ibu Rumah Tangga	51(56,0)
		Swasta	26(28,6)
		Guru	5(5,5)
		Lainnya **	51(56,0)

*) Kuli, Sopir, Karyawan BUMN, Dispenduk kelurahan, Guru, dan Admin sekolah.
**) Mahasiswi, Wirausaha, Asisten apoteker, dan PNS.

Pendapatan keluarga responden per bulannya mayoritas berada pada rentang Rp 2.000.000,00 sampai dengan Rp 4.000.000,00 per bulan dengan persentase 47% (Gambar 1).



Gambar 1. Penghasilan Keluarga per Bulan

Kelengkapan Imunisasi

Dari survei yang dilakukan, 94 (92,2%) balita telah melakukan imunisasi dasar secara lengkap dan 8 (7,8%) sisanya belum melaksanakan imunisasi dengan lengkap.

Beberapa alasan ketidak lengkapan imunisasi kedelapan anak tersebut diantaranya karena lupa (4 balita), sakit saat periode pemberian imunisasi (3 balita), dan tidak tahu jadwal imunisasi (1 balita) (Tabel 3).

Tabel 3. Alasan Ketidaklengkapan Imunisasi Dasar pada Balita Responden

Alasan Ketidaklengkapan imunisasi Dasar	n (%)
Lupa	4(3,92)
Sakit Saat Periode Pemberian	3(2,94)
Tidak Tahu Jadwal	1(0,98)

Dari enam imunisasi dasar yang telah dilakukan, imunisasi yang mayoritas telah diterima adalah imunisasi BCG (98,0%) dan yang paling sedikit adalah imunisasi campak (76,5%). Hal ini karena imunisasi campak diberikan saat anak umur 9 bulan dan saat pengambilan data usia balita tersebut belum 9 bulan.

Tabel 4. Imunisasi yang telah diberikan pada 102 balita

Nama Imunisasi	n (%)
Polio	93 (91,2)
Campak	78 (76,5)
Hepatitis B	94 (92,2)
DPT	97 (95,1)
BCG	100 8,0)

Pengetahuan Ibu tentang imunisasi dasar

Berdasarkan Tabel 5 diketahui pengetahuan ibu mengenai imunisasi, didapat hasil bahwa pengetahuan ibu paling baik mengenai usia pertama pemberian imunisasi (100% jawaban benar). Seluruh responden menjawab usia pertama pemberian imunisasi adalah sejak lahir. Pemberian imunisasi dasar lengkap dimulai pada bayi berusia kurang dari 24 jam dengan diberikan imunisasi Hepatitis B (HB-0), usia 1 bulan diberikan BCG dan Polio 1, usia 2 bulan diberikan DPT-HB-Hib 1 dan Polio 2, usia 3 bulan diberikan DPT-HB-Hib 2 dan Polio 3, usia 4 bulan diberikan DPT-HB-Hib 3, Polio 4 dan IPV atau Polio suntik, dan usia 9 bulan diberikan Campak atau MR (Kemenkes, 2018).

Mayoritas responden (97,8%) juga menjawab dengan benar pertanyaan mengenai cara pemberian imunisasi. Responden menjawab pemberian imunisasi dengan disuntikan melalui paha. Vaksin campak, hepatitis-B, Hib, DPT disuntikkan di lengan atau paha (Soedjatmiko, 2013).

Tabel 5. Jawaban Responden pada Kuesioner Pengetahuan

Topik	Jawaban Responden, n (%)	
	Benar	Salah
Arti imunisasi	87(95,6)	4 (4,4)
Cara kerja imunisasi	84(92,3)	7 (7,3)
Kandungan dalamvaksin	4 (52,8)	43(47,2)
Usia pertama imunisasi	91(100,0)	0 (0,0)
Jenis imunisasi dasarwajib	78 (85,7)	13 (14,3)
Cara pemberian imunisasi	89 (97,8)	2 (2,2)
Imunisasi yang diberikan melalui mulut	77 (84,6)	14 (15,4)
Kegunaan imunisasi BCG	48 (52,8)	43 (47,2)
Kegunaan imunisasi DPT	61 (67,0)	30 (33,0)

Sebagian besar responden (95,6%) menjawab arti imunisasi adalah upaya pencegahan terhadap penyakit infeksi. Vaksin diberikan kepada individu yang sehat guna merangsang munculnya antibodi atau kekebalan tubuh guna mencegah dari infeksi penyakit tertentu. Yang perlu digaris bawahi, imunisasi memberikan perlindungan kekebalan terhadap penyakit secara spesifik tergantung jenis vaksin yang diberikan (Kemenkes RI, 2016).

Berikutnya yaitu cara kerja imunisasi, sebanyak 92,3% responden menjawab benar yaitu untuk meningkatkan daya tahan tubuh. Imunisasi yang diberikan akan merangsang sistem imunitas dalam tubuh (kekebalan) yang bertahan cukup lama untuk melindungi seseorang terhadap infeksi patogen (WHO,2019).

Sebanyak 85,7% responden mengetahui jenis imunisasi dasar lengkap. Program imunisasi dasar lengkap menurut Peraturan Menteri Kesehatan Republik Indonesia no. 42 tahun 2013 wajib diberikan pada bayi sebelum berusia satu tahun, yang terdiri dari *Bacillus Calmette Guerin* (BCG), *Diphtheria Pertussis Tetanus - Hepatitis B - Haemophilus influenzae type B* (DPT-HB-HiB), hepatitis B pada bayi baru lahir, polio dan campak (Kemenkes, 2013).

Pada topik imunisasi yang diberikan melalui mulut, sebanyak 84,6% responden menjawab benar yaitu Vaksin Polio secara oral (melalui mulut). Vaksin ini diberikan 1 dosis (dua tetes) sebanyak 4 kali, dengan interval setiap dosis minimal 4 minggu (Kemenkes,2014).

Sebanyak 67,0% responden menjawab benar mengenai kegunaan imunisasi DPT yaitu untuk mencegah difteri, pertusis dan tetanus (Kemenkes, 2016). Sebanyak 52,8% responden menjawab benar mengenai kegunaan vaksin BCG yaitu vaksin untuk tuberkulosis (TB) dikenal dengan BCG (*Bacille Calmette- Guérin*) (Queensland Health, 2017).

Sebanyak 52,8% jawaban benar pada topik mengenai kandungan yang diberikan pada vaksin. Vaksin adalah suatu zat yang merupakan bentuk produk biologi yang diketahui berasal dari virus, bakteri atau dari kombinasi antara keduanya yang dilemahkan (Kemenkes, 2016).

Tabel 6. Klasifikasi Pengetahuan Responden

Klasifikasi *	n (%)
Baik (7-9)	64 (70,3)
Cukup (5-6)	25 (27,5)
Kurang (1-4)	2 (2,2)

*) Pengelompokan pengetahuan ibu menurut Arikunto, 2010 menjadi 3 kategori yaitu: baik (76% - 100%), cukup (56% - 75%), dan kurang (≤ 55%).

Pengetahuan ibu mengenai imunisasi tergolong baik yaitu (70,3%). Dengan memiliki pengetahuan, maka pengetahuan tersebut dapat diaplikasikan dalam kehidupan sehari-hari, seperti halnya dengan imunisasi. Orang tua dengan pengetahuan imunisasi yang tinggi akan cenderung memberikan anaknya imunisasi dasar yang lengkap dan memperhatikan jadwal pemberiannya. Namun, jika memiliki pengetahuan imunisasi yang rendah, maka mereka tidak akan mengerti apa yang harus dilakukan mengenai imunisasi itu sendiri (Triana, 2016).

Sikap ibu tentang imunisasi dasar

Hasil kuesioner mengenai sikap ibu terhadap imunisasi, didapat 92,4% ibu mendukung program imunisasi dasar (Tabel 7). Pada pertanyaan mengenai kesediaan ibu dan pentingnya imunisasi anak, 100% ibu menjawab ya. Pada pertanyaan nomor 3, 95,6% ibu menyetujui bahwa manfaat dari vaksin lebih besar daripada efek sampingnya. 93,4% ibu tetap akan memvaksinasi anaknya walaupun mendengar laporan efek samping vaksin dari orang lain dan anaknya mengalami demam. 96,7% responden tetap mengimunisasi anaknya meskipun tempat pelayanan kesehatan jauh dari tempat tinggalnya. 93,4% responden tidak keberatan apabila biaya imunisasi dibebankan pada mereka. Sejumlah 81,3% responden tidak terpengaruh adanya isu mengenai vaksin palsu. Keragu-raguan ibu terbesar berada pada keputusan pemberian imunisasi setelah beredarnya isu mengenai isu mengenai vaksin palsu (14,3%) dan status kehalalan vaksin (13,2%).

Terkait vaksin palsu yang ditemukan oleh Bareskrim Mabes Polri merupakan vaksin dengan merek dan produksi luar negeri. Jika orang tua

mengimunisasi bayi dan anak-anaknya pada fasilitas kesehatan milik pemerintah seperti puskesmas dan rumah sakit umum daerah, maka kemungkinan mendapatkan vaksin palsu dapat dihindari (Ferdiansyah, 2016). Banyaknya isu terkait halal-haramnya vaksin menyebabkan ibu ragu untuk memberikan vaksin untuk anaknya, Fatwa MUI telah menyatakan bahwa vaksin MR ini haram karena mengandung bahan yang berasal dari babi, tapi boleh digunakan dalam kondisi terpaksa dan memperbolehkan penggunaan vaksin tersebut untuk imunisasi, dengan syarat ada kondisi terpaksa dan belum ada vaksin MR yang halal (Fatwa MUI, 2018).

Tabel 7. Sikap Orangtua terhadap Pemberian Imunisasi Dasar pada Balita

PERTANYAAN	Jawaban n(%)		
	Y*	T*	R*
Apakah anda setuju jika anak anda diimunisasi?	91 (100,0)	0 (0,0)	0 (0,0)
Apakah anda setuju bahwa imunisasi itu penting untuk kesehatan anak?	91 (100,0)	0 (0,0)	0 (0,0)
Apakah anda setuju bahwa manfaat yang didapat dari imunisasi lebih besar daripada kerugiannya (efek samping)?	87 (95,6)	1 (1,1)	3 (3,3)
Jika anda mendengar laporan mengenai efek samping yang terjadi setelah imunisasi dari orang lain, apakah anda masih memberikan anak anda diimunisasi?	85 (93,4)	5 (5,5)	1 (1,1)
Jika anak anda mengalami demam setelah imunisasi, apakah anda masih akan memberikan imunisasi selanjutnya kepada anak anda?	85 (93,4)	5 (5,5)	1 (1,1)
Jika pelayanan kesehatan yang menyediakan layanan imunisasi (RS/puskesmas/posyandu/praktek dokter) jauh dari rumah anda, apakah anda mau mengantarkan anak anda diimunisasi?	88 (96,7)	2 (2,2)	1 (1,1)
Jika biaya imunisasi memberatkan anda, apakah anda akan tetap mengimunisasi anak anda?	85 (93,4)	3 (3,3)	3 (3,30)
Dengan beredarnya isu vaksin palsu, apakah anda tetap bersedia memberikan imunisasi kepada anak anda?	74 (81,3)	4 (4,4)	13 (14,3)
Dengan beredarnya isu kandungan haram pada vaksin, apakah anda tetap bersedia memberikan imunisasi kepada anak anda?	71 (78,0)	8 (8,8)	12 (13,2)
Total	757 (92,4)	28 (3,4)	3 (4.2)

*) Y= Ya, T=Tidak, R=Ragu-ragu

Selain pengetahuan, sikap juga dapat menjadi faktor yang mempengaruhi perilaku ibu terhadap pemberian imunisasi dasar pada anaknya. Menurut Azwar (2013), sikap terjadi karena adanya rangsangan seperti pengetahuan. Rangsangan inilah yang menstimulus untuk member respon berupa sikap positif maupun yang negatif yang pada akhirnya akan diaplikasikan dalam kehidupan.

KESIMPULAN

Dari hasil penelitian yang dilakukan di Kelurahan Kalirejo, Kecamatan Lawang, Kabupaten Malang, diharapkan penelitian ini dapat dijadikan sebagai acuan untuk menetapkan strategi program penyuluhan imunisasi dasar dengan mempertimbangkan hal-hal yang mempengaruhi ketepatan pelaksanaan kegiatan penyuluhan pada ibu-ibu yang memiliki bayi atau balita. Selain itu diharapkan dilakukan penelitian yang lebih lanjut dan mendalam mengenai faktor apa saja yang mempengaruhi kelengkapan imunisasi dasar dengan metode yang berbeda.

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HUBUNGAN PENGETAHUAN DAN SIKAP IBU DENGAN KELENGKAPAN IMUNISASI DASAR PADA BAYI DI POSYANDU ASOKA WILAYAH KERJA UPTD PUSKESMAS WAISAI KABUPATEN RAJA AMPAT

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ABSTRAK

Pendahuluan Imunisasi merupakan upaya yang dilakukan untuk meningkatkan kekebalan seseorang dalam mempertahankan perlindungan terhadap penyakit. Data Kementrian Kesehatan tahun 2016 menunjukan bahwa indikator capaian imunisasi sebesar 91,58%. Provinsi dengan capaian 100% adalah Provinsi Sumatera Selatan, DKI Jakarta, Jawa Tengah, sedangkan Papua Barat sebesar 83,88%. Data Dinas Kesehatan Kabupaten Raja Ampat pada tahun 2017 mencatat bahwa jumlah imunisasi lengkap pada bayi sebanyak 487 bayi (38,1%) dari sasaran cakupan imunisasi sebanyak 1277 bayi. **Tujuan penelitian**: untuk mengetahui hubungan pengetahuan dan sikap ibu dengan kelengkapan imunisasi dasar bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat. **Metode penelitian**: Jenis penelitian ini adalah penelitian kuantitatif dengan pendekatan *cross sectional study*. Penelitian ini dilaksanakan pada bulan Maret 2019 di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat. Teknik pengambilan sampel menggunakan teknik *purposive sampling* sebanyak 75 responden. Instrument dalam penelitian ini menggunakan kuesioner dan analisa data menggunakan uji *chi square*. **Hasil penelitian**: Hasil variabel pengetahuan diperoleh nilai p = 0,000 dan variabel sikap diperoleh nilai p = 0,000 maka Ha diterima yang berarti ada hubungan pengetahuan dan sikap ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat. **Kesimpulan**: ada hubungan pengetahuan dan sikap dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat.

Kata Kunci : Kelengkapan Imunisasi Dasar,Pengetahuan, Sikap

MOM'S KNOWLEDGE AND ATTITUDE RELATIONSHIP WITH BASIC IMMUNIZATION COMPLETENESS FOR BABIES IN POSYANDU ASOKA WORKING AREA OF PUSKESMAS WAISAI UPTD, KABUPATEN RAJA AMPAT

ABSTRACT

Introduction *Immunization is an effort made to increase a person's immunity in maintaining protection against disease. Data from the Ministry of Health in 2016 shows that the immunization achievement indicator is 91.58%. Provinces with 100% achievement were South Sumatra, DKI Jakarta, Central Java, while West Papua was 83.88%. Data from the Raja Ampat District Health Office in 2017 noted that the total number of complete immunizations in infants was 487 infants (38.1%) of the target immunization coverage of 1277 infants.* ***The research objective****: to determine the relationship between knowledge and attitudes of mothers with the completeness of basic immunization for infants in Posyandu Asoka, the UPTD Waisai Health Center, Raja Ampat Regency.* ***Research method****: This type of research is a quantitative study with a cross sectional study approach. This research was conducted in March 2019 at Posyandu Asoka, the UPTD Waisai Community Health Center, Raja Ampat Regency. The sampling technique used purposive sampling technique of 75 respondents. The instrument in this study used a questionnaire and data analysis used the chi*

square test. ***The results of the study****: The results of the knowledge variable obtained p = 0,000 and the attitude variable obtained p = 0,000, then Ha was accepted, which means that there is a relationship between knowledge and attitudes of mothers with completeness of basic immunization in infants at Posyandu Asoka, UPTD Puskesmas Waisai, Raja Ampat Regency.* ***Conclusion****: there is a relationship between knowledge and attitudes with the completeness of basic immunization for infants at Posyandu Asoka, the UPTD Waisai Health Center, Raja Ampat Regency.*

Keywords: Completeness of Basic Immunization, Knowledge, Attitude

PENDAHULUAN

Imunisasi merupakan upaya yang dilakukan untuk meningkatkan kekebalan seseorang dalam mempertahankan perlindungan terhadap penyakit. Pelaksanaan imunisasi mencakup program imunisasi yang diwajibkan kepada seseorang sebagai bagian dari masyarakat dalam rangka melindungi yang bersangkutan dan masyarakat sekitarnya dari penyakit yang dapat dicegah dengan imunisasi (Kemenkes, 2017).

Menurut data *World Health Organization* (WHO) bahwa 21,8 juta anak pada tahun 2013 tidak mendapatkan imunisasi. Pelaksanaan imunisasi dapat mencegah 2-3 juta kematian anak setiap tahun yang diakibatkan oleh penyakit difteri, tetanus, pertusis, dan campak pada tahun 2014. Pada tahun 2014 terdapat 18,7 juta bayi di seluruh dunia yang tidak mendapat imunisasi rutin DPT3 dan sekitar 60 persen dari anak-anak ini tinggal di 10 negara yaitu Republik Demokrasi Kongo, Eutopia, India, Iraq, Nigeria, Pakistan, Philipina, Uganda, dan Afrika Selatan (WHO, 2016).

Negara-negara ASEAN yang telah mencapai target imunisasi campak yaitu 90% adalah Brunei Darussalam (99%), Thailand (98%), Vietnam (96%), Kamboja (93%), dan negara yang terendah adalah Laos dengan cakupan imunisasi campak sebesar 72%. Sedangkan Indonesia cakupan imunisasi campak sebesar 84%. Meskipun cakupan imunisasi campak Indonesia baik tetapi belum mencapai target cakupan imunisasi campak negara ASEAN sebesar 90% (Kemenkes, 2017).

Program imunisasi di Indonesia mewajibkan setiap bayi (usia 0-11 bulan) mendapatkan imunisasi dasar lengkap yang terdiri dari 1 kali pemberian hepatitis B, 1 kali pemberian BCG, 3 kali pemberian DPT-HB-Hib, 4 kali pemberian polio, dan 1 kali pemberian campak. Banyak ibu yang tidak mengetahui bahaya apa saja yang bisa berdampak pada bayinya jika bayi tidak diimunisasi. Dampak yang ditimbulkan bila bayi tidak mendapatkan imunisasi antara lain penyakit hepatitis B, TBC, difteri, pertusis, polio, dan campak. Jenis imunisasi yang mendapatkan perhatian salah satunya campak, diharapkan target pada tahun 2020 Indonesia menjadi Negara yang terlibat dalam eliminasi campak mencapai cakupan campak minimal 95% diseluruh wilayah secara merata. Hal ini terkait dengan realita bahwa campak menjadi salah satu penyebab utama kematian pada balita dan pengobatan tidak efektif untuk penderita campak. Dengan demikian pencegahan campak memiliki peran signifikan dalam penurunan angka kematian balita (Kemenkes, 2017).

Data Kementrian Kesehatan tahun 2016 menunjukan bahwa indikator capaian imunisasi sebesar 91,58%. Provinsi dengan capaian tertinggi adalah Provinsi Sumatera Selatan (100%), DKI Jakarta (100%), Jawa Tengah (100%) dan capaian terendah adalah Provinsi Kalimantan Utara (56,08%), sedangkan Papua Barat sebesar (83,88%) (Kemenkes, 2017). Meskipun Provinsi Papua Barat mempunyai presentase imunisasi dasar

yang cukup baik tetapi target rencana strategi yang diharapkan belum tercapai.

Program imunisasi pada bayi bertujuan agar setiap bayi mendapatkan imunisasi dasar secara lengkap. Keberhasilan seorang bayi dalam mendapatkan imunisasi dasar tersebut diukur melalui indikator imunisasi dasar lengkap. Berdasarkan data awal peneliti dari Dinas Kesehatan Kabupaten Raja Ampat, bahwa sasaran cakupan imunisasi untuk batita sebanyak 1277 bayi dengan jenis kelamin laki-laki sebanyak 652 bayi dan perempuan sebanyak 625 bayi. Data Dinas Kesehatan Kabupaten Raja Ampat mencatat bahwa jumlah imunisasi lengkap pada bayi (usia 0-9 bulan) sebanyak 487 bayi (38,1%) dengan jumlah jenis kelamin laki-laki sebanyak 255 bayi dan perempuan sebanyak 232 bayi dari total keseluruhan bayi yang tercatat (Dinkes Kabupaten Raja Ampat, 2017).

Bundt *et al* (2004), mengatakan bahwa status imunisasi anak dipengaruhi oleh perilaku orang tua sebagai orang yang bertanggung jawab atas kesehatan dan masa depan anaknya, perilaku tersebut meliputi pengetahuan, pendidikan, sikap, usia, tingkat pendapatan, nilai atau kepercayaan tentang imunisasi. Penelitian Nugroho (2012), berdasarkan tingkat pengetahuan tentang imunisasi dari 84 responden, diketahui bahwa ibu yang berpengetahuan kurang tentang imunisasi sebanyak 57 orang (67,9%). Sedangkan ibu berpengetahuan baik sebanyak 27 orang (32,1%). Wadud (2013) juga menyatakan bahwa pengetahuan ibu berbanding lurus dengan kelengkapan imunisasi dasar pada balita.

Penelitian Umaroh (2014), menunjukan dari 70 orang responden diketahui bahwa ibu yang mempunyai sikap kurang sebanyak 32 orang responden (45,7%), Sedangkan ibu yang mempunyai sikap baik sebanyak 38 orang responden (54,3%). Penelitian ini juga diperkuat dengan penelitian oleh Anton (2014), yang menunjukkan hasil penelitian dengan jumlah responden sebanyak 32 orang didapatkan ibu yang mempunyai sikap buruk sebanyak 10 orang responden (31,2%), sikap sedang 15 orang responden (46,9%), dan sikap baik 7 orang responden (21,9%). Notoatmodjo (2007) berpendapat bahwa sikap merupakan kesiapan atau kesediaan untuk bertindak dan bukan merupakan pelaksaan motif tertentu. Sikap belum merupakan suatu tindakan atau aktifitas, tetapi merupakan predisposisi tindakan suatu perilaku.

Sikap mendorong seseorang untuk berperilaku ke arah yang positif dalam mendapatkan layanan kesehatan. Individu yang memiliki sikap positif akan menunjukkan perilaku yang baik. Menurut Notoadmojo (2007) sikap adalah reaksi yang tertutup terhadap stimulus atau objek yang belum terlihat.

Ibu yang memiliki sikap kurang juga dipengaruhi pendidikan yang rendah. Ibu yang memiliki pendidikan rendah memiliki pengetahuan yang rendah sehingga memengaruhi ibu dalam menunjukkan sikap

Data dari Puskesmas Waisai Wilayah Kerja Kabupaten Raja Ampat, menunjukan dari 7 Posyandu yang berada di Wilayah Kerja Puskesmas Waisai angka kunjungan terbanyak di Posyandu Asoka dengan jumlah sebesar 75 kunjungan. Berdasarkan data tersebut maka peneliti tertarik melakukan penelitian di Posyandu Asoka Wilayah Kerja Puskesmas Waisai Kabupaten Raja Ampat.
Berdasarkan studi pendahuluan yang dilakukan peneliti kepada 10 ibu yang membawa anak bayinya berobat di Puskesmas Waisai didapatkan hasil bahwa 6 ibu mempunyai pengetahuan dan sikap yang kurang tentang imunisasi dasar lengkap, sedangkan 4 ibu memiliki pengetahuan dan sikap yang baik mengenai imunisasi dasar lengkap. Berdasarkan data tersebut, dan belum adanya penelitian yang dilakukan di Waisai maka peneliti tertarik untuk meneliti tentang hubungan pengetahuan dan sikap ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu

Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat.

Rumusan Masalah

Apakah ada hubungan pengetahuan dan sikap ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat ?

Tujuan Penelitian

1. Mengetahui hubungan pengetahuan ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat
2. Mengetahui hubungan sikap ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat

BAHAN DAN METODE PENELITIAN

Penelitian ini menggunakan desain penelitian *kuantitatif* dengan pendekatan *cross sectional*. Populasi pada penelitian ini adalah semua ibu yang membawa bayi berkunjung ke Posyandu Asoka di Wilayah Kerja UPTD Puskesmas Waisai yang menjadi cakupan program imunisasi rata-rata perbulan sebanyak 75 bayi. Sampel penelitian adalah semua ibu yang membawa bayi berkunjung ke Posyandu Asoka. Teknik pengambilan sampel dengan menggunakan *purposive sampling*. Instrumen yang digunakan dalam penelitian ini adalah kuesioner dan KMS. Kuesioner pengetahuan diadopsi dari penelitian sebelumnya yaitu Banin (2010) yang terdiri dari 10 pertanyaan. Kuesioner penilaian sikap diadopsi dari penelitian sebelumnya yaitu Sumanti (2017), yang terdiri dari 10 pertanyaan.

Pengumpulan data pada penelitian ini dilakukan dengan cara menyebarkan kuesioner pada ibu- ibu yang berkunjung ke Posyandu Asoka. Penelitian ini dilakukan analisis dengan menggunakan *chi-square*.

HASIL PENELITIAN

Tabel 1. Distribusi Frekuensi Karakteristik Responden di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019.

Karakteristik	Frekuensi (f)	Persentase (%)
Usia bayi		
0-6 bulan	35	46,7
7-12 bulan	40	53,3
Usia ibu		
17-25 tahun	37	49,3
26-45 tahun	38	50,7
Pendidikan		
Tinggi	28	37,3
Rendah	47	62,7
Pekerjaan		
PNS	8	9,7
Pedagang	32	42,7
IRT	35	47,6

Sumber data primer 2019

Tabel 2. Distribusi Frekuensi Responden Berdasarkan Pengetahuan di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019

Karakteristik	Frekuensi (f)	Presentase (%)
Pengetahuan		
Baik	25	33,3
Kurang	50	66,7

Sumber data primer 2019

Tabel di atas menunjukkan bahwa lebih dari setengah jumlah responden mempunyai pengetahuan yang kurang sebanyak 50 orang (66,7%).

Tabel 3. Distribusi Frekuensi Responden Berdasarkan Sikap di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019

Karakteristik	Frekuensi (f)	Persentase (%)
Sikap		
Baik	27	36
Kurang	48	64

Sumber data primer 2019

Tabel di atas menunjukkan bahwa lebih dari setengah jumlah responden mempunyai sikap yang kurang sebanyak 48 orang (64%).

Tabel 4. Distribusi Frekuensi Responden Berdasarkan Kelengkapan Imunisasi Dasar di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019.

Karakteristik	Frekuensi (f)	Persentase (%)
Kelengkapan Imunisasi Dasar		
Lengkap	26	34,7
Tidak lengkap	49	65,3

Sumber data primer 2019

Tabel di atas menunjukkan bahwa lebih dari setengah jumlah responden mempunyai kelengkapan imunisasi yang tidak lengkap sebanyak 49 orang (65,3%)

Tabel 5
Analisis Bivariat Pengetahuan dengan Kelengkapan Imunisasi Dasar di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019.

No	Pengetahuan	Imunisasi Dasar: Lengkap F	%	Tidak Lengkap F	%	Total	%
1	Baik	17	68	8	32	25	100
2	Kurang	9	18	41	82	50	100
	Total	26		49		75	
α = 0,05						*p value* = 0,000	

Sumber data primer 2019

Hasil penelitian menunjukkan bahwa ibu yang memiliki pengetahuan baik sebagian besar memiliki kelengkapan imunisasi dasar yang lengkap sebanyak 68%, dan ibu yang memiliki pengetahuan yang kurang sebagian besar memiliki kelengkapan imunisasi dasar yang tidak lengkap sebanyak 82%.

Hasil uji statistik menggunakan *chi-square* dengan taraf signifikansi α = 0,05 diperoleh *p value* = 0,000 menunjukkan ada hubungan pengetahuan dengan imunisasi dasar.

Tabel 6 Analisis Bivariat Sikap dengan Kelengkapan Imunisasi Dasar di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019

No	Sikap	Imunisasi Dasar: Lengkap F	%	Tidak Lengkap F	%	Total	%
1	Baik	21	77,8	6	22,2	27	100
2	Kurang	5	10,4	43	89,6	48	100
	Total	26		49		75	
α = 0,05						*p value* = 0,000	

Hasil penelitian menunjukkan bahwa ibu yang memiliki sikap baik sebagian besar memiliki kelengkapan imunisasi dasar yang lengkap sebanyak 77,8%, dan ibu yang memiliki sikap yang kurang sebagian besar memiliki kelengkapan imunisasi dasar yang tidak lengkap sebanyak 89,6%.

Hasil uji statistik dengan menggunakan *chi-square* dengan taraf signifikansi α = 0,05 diperoleh *p value* = 0,000, yang berarti ada hubungan sikap dengan kelengkapan imunisasi dasar.

PEMBAHASAN

Hubungan pengetahuan ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019

Hasil penelitian diperoleh hubungan antara pengetahuan dengan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019. Penelitian ini mendukung penelitian yang dilakukan oleh Sisfiani (2014) yang menunjukkan ada hubungan faktor pengetahuan dengan imunisasi dasar dengan nilai $p = 0{,}003$.

Pengetahuan pada tingkatan dasar berawal dari tahu, yang mana seseorang bisa tahu apabila orang tersebut telah melalui tahapan proses penginderaan mulai dari penglihatan, pendengaran, penciuman, rasa dan raba. Akan tetapi pengetahuan yang diperoleh manusia lebih banyak diperoleh dari penginderaan penglihatan dan pendengaran (Notoadmojo, 2012).

Berdasarkan tabel 1 menunjukkan bahwa usia ibu lebih banyak berada pada usia 26-45 tahun sebanyak 50,7%. Menurut Rizqiawan (2008) bahwa ibu yang usianya matang maka akan meningkatkan pengalaman ibu dalam mencegah timbulnya penyakit, sehingga ibu berupaya memenuhi kelengkapan imunisasi pada anaknya.

Pengetahuan yang baik akan mempunyai pengaruh yang baik pula pada tindakan ibu dalam pemberian imunisasi dasar pada anak. Hal ini sesuai juga dengan teori menurut Fitriani (2011) yang menyatakan bahwa perilaku yang didasari oleh pengetahuan akan lebih langgeng dari pada perilaku yang tidak didasari oleh pengetahuan.

Hasil penelitian menunjukkan bahwa ibu yang memiliki pengetahuan baik sebagian besar memiliki kelengkapan imunisasi dasar yang lengkap sebanyak 68%. Ibu yang memiliki pengetahuan yang baik yang memberikan anaknya imunisasi secara lengkap.

Salah satu faktor yang memengaruhi kelengkapan pemberian imunisasi dasar yaitu pendidikan ibu. Berdasarkan tabel 1 menunjukkan bahwa sebagian besar ibu berpendidikan rendah sebanyak 62,7%. Ningrum dan Sulastri (2008) menyatakan bahwa ibu dengan tingkat pendidikan tinggi cenderung memiliki anak yang kelengkapan imunisasi dasarnya lengkap, demikian sebaliknya bahwa ibu yang tingkat pendidikannya rendah, kelengkapan imunisasi dasar anaknya kurang lengkap.

Tingkat pendidikan seseorang memengaruhi pengetahuan, yang berarti seseorang yang memiliki pendidikan yang tinggi akan memperoleh informasi untuk melakukan perubahan terhadap status kesehatannya sebagai upaya pencegahan terhadap penyakit.

Selain faktor pendidikan, kelengkapan imunisasi juga dipengaruhi oleh faktor pekerjaan. Berdasarkan tabel 1 pekerjaan ibu sebagian besar adalah ibu yang tidak bekerja atau ibu rumah tangga sebanyak 47,6%. Ibu yang bekerja tentu akan mudah mendapatkan informasi berkaitan dengan manfaat imunisasi dasar pada anak, sebaliknya ibu yang tidak bekerja tidak mendapatkan informasi tentang pentingnya anak diimunisasi.

Ibu yang memiliki pengetahuan yang baik dan atau cukup akan memengaruhi tindakan dalam memberikan imunisasi secara lengkap bagi anaknya. Pengetahuan mengenai imunisasi tidak hanya tentang jenis imunisasi yang diberikan bagi bayi akan tetapi dimulai dari pengertian imunisasi, waktu pemberian imunisasi, manfaat imunisasi tempat layanan imunisasi dan jumlah pemberian imunisasi. Ibu dengan pengetahuan baik akan cenderung berperilaku yang baik juga dalam bidang kesehatan seperti memberikan anak imunisasi sesuai dengan usianya (Notoadmojo, 2007).

Menurut Rahmawati dan Umbul (2014), ibu yang memiliki pengetahuan yang baik memengaruhi perilaku ibu dalam hidup sehat diantaranya kelengkapan imunisasi pada anak.

Menurut Albertina dkk (2009), pengetahuan ibu yang kurang memengaruhi

keikutsertaan ibu dalam membawa bayi untuk di imunisasi ke pelayanan kesehatan.

Hasil penelitian menunjukkan bahwa sebagian besar ibu memiliki pengetahuan kurang tentang imunisasi dasar (66,7%) .

Menurut asumsi peneliti, dari hasil penelitian yang telah dilakukan bahwa pengetahuan ibu terhadap imunisasi sangat penting untuk melakukan imunisasi terhadap bayinya. Banyaknya ibu yang kurang pengetahuannya terhadap imunisasi menyebabkan banyak bayi yang tidak mendapatkan imunisasi lengkap sesuai dengan umur bayi.

Pengetahuan ibu tentang pentingnya imunisasi dasar untuk menjaga kekebalan tubuh bayinya perlu dilakukan tindakan yang nyata dari seluruh stakeholder kesehatan seperti peran aktif petugas dalam melakukan penyuluhan dan penyampaian informasi dengan media yang lebih menarik tentang imunisasi dasar kepada masyarakat agar pengetahuan bertambah. Bertambahnya pengetahuan tentang imunisasi diharapkan orang tua terutama ibu akan lebih sadar untuk melakukan imunisasi dasar secara lengkap terhadap bayinya, dengan demikian tidak ada lagi bayi yang tidak diimunisasi sesuai dengan umur bayi, sehingga dapat meningkatkan keberhasilan program imunisasi dasar pada bayi.

Hubungan sikap ibu dengan kelengkapan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019

Hasil penelitian diperoleh ada hubungan antara sikap dengan imunisasi dasar pada bayi di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat Tahun 2019. Penelitian ini mendukung hasil penelitian yang dilakukan oleh Sisfiani (2015) yang menyatakan terdapat hubungan yang bermakna antara sikap dengan pemberian imunisasi dasar pada balita di Desa Taraitak Satu Kecamatan Langowan Utara (*p value* = 0,005).

Sikap dapat diartikan sebagai respon seseorang yang masih belum nampak terhadap adanya suatu stimulus atau sebuah objek. Sehingga sikap belum dimanifestasikan sebagai hal yang dapat dilihat secara langsung. Perilaku seseorang diawali dengan adanya sikap terhadap suatu objek tertentu yang bisa berupa sikap pandangan, sikap perasaan dan sikap untuk cenderung bertindak sesuai objek (Notoadmojo, 2012).

Berdasarkan tabel 6 ibu yang memiliki sikap yang kurang sebagian besar memiliki kelengkapan imunisasi dasar yang tidak lengkap sebanyak 89,6%. Sikap yang kurang dipengaruhi salah satu oleh faktor pengetahuan. Hasil penelitian ini menunjukkan pengetahuan kurang lebih banyak yaitu 66,7%. Ibu yang menunjukkan sikap yang kurang, pasti belum mendapatkan informasi yang jelas mengenai imunisasi sehingga ibu juga menunjukkan sikap yang kurang terhadap kelengkapan imunisasi anaknya.

Hasil penelitian ini bahwa sikap yang dimiliki ibu mempunyai hubungan yang signifikan terhadap perilaku ibu dalam membawa balita ke posyandu untuk mendapatkan imunisasi sesuai waktunya. Ibu yang memiliki sikap yang baik, memiliki tindakan yang baik dalam pemberian imunisasi dasar pada balita. Hasil penelitian dan pembahasan di atas, didapatkan bahwa sebagian besar responden yang sikapnya baik, perilakunya dalam membawa bayi untuk dilakukan imunisasi dasar juga lengkap.

Menurut Azwar (2013) tingkatan sikap meliputi menerima yaitu individu memerhatikan rangsangan (stimulus) yang diberikan, merespon dimana seseorang memberikan respon melalui verbal, tindakan, menghargai yaitu seseorang memberikan kesempatan kepada orang lain untuk mengerjakan atau mendiskusikan sesuatu, dan bertanggung jawab yaitu individu menyatakan kesiapan terhadap

risiko dari keputusan atau tindakan yang dilakukannya.

Menurut asumsi peneliti, kebanyakan ibu di Waisai belum memiliki sikap yang baik dalam menentukan keberhasilan pemberian imunisasi dasar pada bayinya. Hal ini dibuktikan dengan masih adanya bayi yang belum diimunisasi sesuai dengan umurnya. Faktor kemungkinan dikarenakan sibuk mengurus rumah tangga, sibuk berdagang dan kurangnya informasi yang disampaikan oleh petugas kesehatan kepada masyarakat.

SIMPULAN DAN SARAN

Simpulan

Ada hubungan pengetahuan ibu dengan kelengkapan imunisasi dasar di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat.

Ada hubungan sikap ibu dengan kelengkapan imunisasi dasar di Posyandu Asoka Wilayah Kerja UPTD Puskesmas Waisai Kabupaten Raja Ampat.

Saran

Bagi peneliti selanjutnya hendaknya dapat dijadikan sebagai sumber informasi bagi peneliti yang ingin melakukan penelitian dengan topik dan ruang lingkup yang sama dengan penelitian ini dengan menggunakan variabel yang lain.

Bagi petugas kesehatan untuk memberikan edukasi kepada masyarakat menggunakan media video dan gambar secara terus menerus tentang pentingnya kelengkapan imunisasi dasar pada bayi untuk meningkatkan kekebalan tubuh agar bayi terhindar dari penyakit.

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Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah

Relationship Between Knowledge and Attitude of Mother and Completeness of Basic Immunization for Babies in the Working Area of Bies Health Center tengah Aceh District

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Abstrak

Pembangunan bidang kesehatan di Indonesia saat ini mempunyai beban ganda (double burden), yaitu beban masalah penyakit menular dan penyakit degeneratif. Tujuan penelitian ini untuk mengetahui Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah dengan desain *cross sectional*. Sampel dalam penelitian ini sebayak 63 orang tua yang mempuyai bayi. pemilihan sampel dalam penilitian ini dilakukan dengan menggunakan teknik sampling random (random sampling) dengan menggunakan rumus slovin, analisis data menggunakan uji chi-square. Hasil Penelitian Ada Hubungan Pengetahuan Dengan Kelengkapan Imunisasi Dasar Pada Bayi diperoleh nilai P Value 0,000 ($P \leq 0,05$). Ada Hubungan Antara Sikap Dengan Kelengkapan Imunisasi Dasar Pada Bayi diperoleh nilai P Value 0,000 ($P \leq 0,05$).

Kata Kunci : Kelengkapan Imunisasi, Pengetahuan, Sikap

Abstract

The development of the health sector in Indonesia currently has a double burden, namely the burden of infectious diseases and degenerative diseases. The purpose of this research is to find out Relationship Between Knowledge and Attitude of Mother and Completeness of Basic Immunization for Babies in the Working Area of Bies Health Center tengah Aceh District with cross sectional design. The sample in this study was 63 parents who had babies the sample selection in this study was carried out using a random sampling technique (random sampling) using the Slovin formula, data analysis using the chi-square testThe sample in this study was 63 parents who had babies. The sample selection in this study was carried out using a random sampling technique. Results of the study There is a relationship between knowledge and completeness of basic immunization in infants, the P value is 0.000 ($P \leq 0.05$). There is a relationship between attitudes and completeness of basic immunization in infants, the P value is 0.000 ($P \leq 0.05$).

Keywords : Immunization Completeness, Knowledge, Attitude

PENDAHULUAN

Imunisasi merupakan salah satu kegiatan prioritas Kementerian Kesehatan yang bertujuan untuk menurunkan angka kesakitan dan kematian akibat penyakit yang dapat dicegah dengan imunisasi (PD3I). PD3I adalah penyakit-penyakit menular yang sangat potensial untuk menimbulkan wabah dan kematian terutama pada balita (Kemenkes RI, 2013).

Pemerintah telah menetapkan bahwa setiap bayi harus mendapatkan 5 jenis imunisasi dasar lengkap sesuai dengan usianya. Jika salah satu jenis imunisasi tidak diberikan maka bayi tersebut termasuk dalam status imunisasi dasar tidak lengkap (Kemenkes RI, 2016). Target cakupan imunisasi dasar lengkap berdasarkan Peraturan Menteri Kesehatan RI Nomor 43 Tahun 2016 tentang Standar Pelayanan Bidang Kesehatan Kabupaten/Kota yaitu sebesar 100%.

Data dari Dinas Kesehatan Aceh Tengah, cakupan imunisasi dasar lengkap pada bayi 3 tahun terakhir telah mengalami peningkatan yaitu pada tahun 2015 mencapai 45,1%, tahun 2016 (53,4%) dan tahun 2017 (55%). Walaupun terjadi peningkatan namun pencapaian dalam 3 tahun terakhir ini masih belum mencapai target yang telah ditetapkan yaitu sebesar 100% menurut Standar Pelayanan Minimal Kabupaten/Kota (Dinas Kesehatan Aceh Tengah 2017).

Data dari Puskesmas Bies, cakupan imunisasi dasar lengkap pada bayi 3 tahun terakhir pada tahun 2015 mencapai 28,1%, tahun 2016 (35,1%) dan tahun 2017 (45,4%). Namun pencapaian dalam 3 tahun terakhir ini masih belum mencapai target yang telah ditetapkan yaitu sebesar 100% menurut Standar Pelayanan Minimal (Puskesmas Bies 2017).

Berdasarkan latar belakang masalah diatas maka penulis merasa tertarik untuk melakukan penelitian mengenai "Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah.

METODE PENELITIAN

Jenis penelitian ini adalah *cross sectional* yaitu penelitian yang bertujuan untuk menganalisis Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah. Populasi dalam penelitian ini adalah sebanyak 171 ibu yang mempunyai bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah. Sampel dalam penelitian ini sebayak 63 orang tua yang mempuyai

bayi. pemilihan sampel dalam penilitian ini dilakukan dengan menggunakan teknik sampling random (random sampling) dengan menggunakan rumus slovin.

HASIL DAN PEMBAHASAN

Hasil penelitian yang dilakukan terhadap 63 Responden untuk mengetahui Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah di peroleh dari data primer berdasarkan dari hasil rekapitulasi tabulasi, didapatkan data sebagai berikut:

A. Univariat

1. Pengetahuan

Tabel 1
Distribusi Frekuensi Pengetahuan di Desa Tingkem Bersatu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah Tahun

No	Pengetahuan	Frekuensi	Persentase
1	Baik	19	30,2 %
2	Cukup	31	49,2 %
3	Kurang	13	20,6 %
Jumlah		**63**	**100 %**

(Sumber: Data Primer)

Berdasarkan data dari tabel diatas dapat dilihat bahwa dari 63 responden (100%), mayoritas responden berpengetahuan cukup tentang kelengkapan imunisai dasar pada bayi sebanyak 31 responden (49,2 %).

2. Sikap

Tabel 2
Distribusi Frekuensi Pengetahuan di Desa Tingkem Bersatu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah Tahun

No	Sikap	Frekuensi	Persentase
1	Positif	34	54,0 %
2	Negatif	29	46,0 %
Jumlah		**63**	**100 %**

(Sumber: Data Primer)

Berdasarkan data dari diatas dapat dilihat bahwa dari 63 responden (100%), mayoritas responden dengan sikap yang positif tentang kelengkapan imunisasi dasar pada bayi sebanyak 34 responden (54,0%).

3. Kelengkapan Imunisasi Dasar Pada Bayi

Tabel 3
Distribusi Frekuensi Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah Tahun

No	Kelengkapan Imunisasi Dasar Pada Bayi	Frekuensi	Persentase
1	Lengkap	36	57,1 %
2	Tidak lengkap	27	42,9 %
Jumlah		**63**	**100 %**

(Sumber: Data Primer)

Berdasarkan data dari tabel diatas dapat dilihat bahwa dari 63 responden (100%), mayoritas responden yang kelengkapan imunisasi dasar pada bayi dengan lengkap sebanyak 36 responden (57,1%).

B. Bivariat

1. Pengetahuan Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi

Tabel 4
Hubungan Pengetahuan Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah Tahun

No	Pengetahuan	Kelengkapan Imunisasi Dasar Pada Bayi				Jumlah		P Value
		Lengkap		Tidak Lengkap				
		F	%	F	%	F	%	
1	Baik	19	52,8	0	0,0	19	30,2	0,000
2	Cukup	17	47,2	14	51,9	31	49,2	
3	Kurang	0	0,0	13	48,1	13	20,6	
Jumlah		**36**	**100**	**27**	**100**	**63**	**100**	

(Sumber: Data Primer)

Berdasarkan tabel diatas dapat dilihat bahwa dari 63 responden (ibu yang mempunyai bayi) yang mempunyai pengetahuan baik dengan kelengkapan imunisasi dasar pada bayi yang lengkap sebanyak 19 responden (52,8%) dan pengetahuan ibu yang baik dengan kelengkapan imunisasi tidak lengkap hanya 0 responden (0,0%), dan ibu yang berpengetahuan cukup dengan

kelengkapan imunisasi dasar pada bayi yang lengkap sebanyak 17 responden (47,2%), sedangkan ibu yang berpengetahuan cukup dengan kelengkapan imunisasi dasar pada bayi yang tidak lengkap sebanyak 14 responden (51,9%) dan ibu yang mempunyai bayi yang berpengetahuan kurang dengan kelengkapan imunisasi dasar pada bayi yang lengkap hanya 0 responden (0,0%). Sedangkan ibu yang mempunyai bayi yang berpengetahuan kurang dengan kelengkapan imunisasi dasar pada bayi tidak lengkap sebanyak 13 responden (48,1%).

Berdasarkan hasil uji statistik Chi Square dan pada derajat kepercayaan 95% dilakukan untuk mengetahui hubungan pengetahuan ibu dengan kelengkapan imunisasi dasar pada bayi, diperoleh nilai P Value 0,000 ($P \leq 0,05$). Hal ini menunjukkan secara statistis bahwa terdapat hubungan yang bermakna antara pengetahuan ibu dengan dengan kelengkapan imunisasi dasar pada bayi di wilayah kerja puskesmas bebesen.

2. Hubungan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi

Tabel 5
Hubungan Sika Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah Tahun

No	Sikap Ibu	Kelengkapan Imunisasi				Jumlah		P *Value*
		Lengkap		Tidak lengkap				
		F	%	F	%	F	%	
1	Positif	34	94,4	0	0,0	34	54,0	0,000
2	Negatif	2	5,6	27	100	29	46,0	
Jumlah		**36**	**100**	**27**	**100**	**63**	**100**	

(Sumber: Data Primer)

Berdasarkan tabel diatas dapat dilihat bahwa dari 63 responden (Ibu yang mempunyai bayi) yang mempunyai sikap positif dengan kelengkapan imunisasi dasar pada bayi yang lengkap sebanyak 34 responden (94,4%) sedangkan ibu yang bersikap positif dengan kelengkapan imunisasi dasar pada bayi yang tidak lengkap hanya 0 responden (0,0%), dan ibu yang bersikap negatif dengan kelengkapan imunisasi dasar pada bayi yang lengkap hanya 2 responden (5,6%). Sedangkan ibu yang bersikap negatif dengan kelengkapan imunisasi dasar pada bayi yang tidak lengkap sebanyak 27 reponden (100%).

Berdasarkan hasil uji statistik Chi Square dan pada derajat kepercayaan 95% dilakukan untuk mengetahui hubungan sikap ibu dengan kelengkapan imunisasi dasar pada bayi, diperoleh nilai P Value 0,000 ($P \leq 0,05$). Hal ini menunjukkan secara statistis bahwa terdapat hubungan yang bermakna antara sikap ibu dengan kelengkapan imunisasi dasar pada bayi di wilayah kerja puskesmas bebesen.

Kelengkapan Imunisasi Dasar Pada Bayi

Berdasarkan data dari hasil penelitian bahwa dari 63 responden (100%), mayoritas responden yang kelengkapan imunisasi dasar pada bayi dengan lengkap sebanyak 36 responden (57,1%).

Dalam Peraturan Menteri Kesehatan Nomor 42 Tahun 2013 tentang penyelenggaraan imunisasi, pasal 6 dinyatakan imunisasi dasar merupakan imunisasi yang diberikan kepada bayi sebelum berusia 1 (satu) tahun.

Imunisasi Hepatitis B bayi baru lahir. Imunisasi hepatitis B adalah imunisasi yang diberikan untuk menimbulkan kekebalan aktif terhadap penyakit hepatitis B, yaitu penyakit infeksi yang dapat merusak hati (Maryunani, 2010). Kini paling tidak 3,9% ibu hamil mengidap hepatitis B aktif dengan risiko penularan kepada bayinya sebesar 45%. Kementerian kesehatan mulai tahun 2005 memberikan vaksin hepatitis B-0 monovalen (dalam kemasan uniject) saat lahir, dilanjutkan dengan vaksin kombinasi DTwP/Hepatitis B pada umur 2-3-4 bulan. Tujuan vaksin hepatitis B diberikan dalam kombinasi dengan DTwP untuk mempermudah pemberian dan meningkatkan cakupan hepatitis B3 yang masih rendah (Ranuh et.al, 2011).

Vaksin hepatitis B harus segera diberikan setelah lahir, mengingat vaksinasi hepatitis B merupakan upaya pencegahan yang sangat efektif untuk memutuskan rantai penularan melalui transmisi maternal dari ibu kepada bayinya. Vaksin hepatitis B diberikan sebaiknya 12 jam setelah lahir dengan syarat kondisi bayi dalam keadaan stabil, tidak ada gangguan pada paru-paru dan jantung (Maryunani, 2010). Vaksin diberikan secara intramuskular dalam. Pada neonatus dan bayi diberikan di anterolateral paha, sedangkan pada anak besar dan dewasa, diberikan di regio deltoid. Interval antara dosis pertama dan dosis kedua minimal 1 bulan, memperpanjang interval antara dosis pertama dan kedua tidak akan mempengaruhi imunogenisitas atau titer antibodi sesudah imunisasi selesai. (Ranuh et.al, 2011).

Untuk ibu dengan HbsAg positif, selain vaksin hepatitis B diberikan juga hepatitis immunoglobulin (HBIg) 0,5 ml di sisi tubuh yang berbeda dalam 12 jam setelah lahir. Sebab, Hepatitis B Imunoglobulin (HBIg) dalam waktu singkat segera memberikan proteksi meskipun hanya jangka pendek (3-6 bulan) (Cahyono, 2010).

Hal ini sejalan dengan hasil penelitian yang dilakukan oleh Riri Novia Sumanti tahun 2017 bahwa responden berdasarkan kelengkapan imunisasi dasar dari 92 responden diperoleh sebanyak 17 responden (18,5%) yang memiliki bayi dengan status imunisasi dasar lengkap sedangkan 75 responden (81,5%) yang memiliki bayi dengan status imunisasi dasar tidak lengkap).

Hubungan Pengetahuan dengan Kelengkapan Imunisasi Dasar Pada Bayi

Berdasarkan data dari tabel 4.3 diatas dapat dilihat bahwa dari 63 responden (ibu yang mempunyai bayi) yang mempunyai pengetahuan baik dengan kelengkapan imunisasi dasar pada bayi yang lengkap sebanyak 19 responden (52,8%) dan pengetahuan ibu yang baik dengan kelengkapan imunisasi tidak lengkap hanya 0 responden (0,0%), dan ibu yang berpengetahuan cukup dengan kelengkapan imunisasi dasar pada bayi yang lengkap sebanyak 17 responden (47,2%), sedangkan ibu yang berpengetahuan cukup dengan kelengkapan imunisasi dasar pada bayi yang tidak lengkap sebanyak 14 responden (51,9%) dan ibu yang mempunyai bayi yang berpengetahuan kurang dengan kelengkapan imunisasi dasar pada bayi yang lengkap hanya 0 responden (0,0%). Sedangkan ibu yang mempunyai bayi yang berpengetahuan kurang dengan kelengkapan imunisasi dasar pada bayi tidak lengkap sebanyak 13 responden (48,1%).

Berdasarkan hasil uji statistik Chi Square dan pada derajat kepercayaan 95% dilakukan untuk mengetahui hubungan pengetahuan ibu dengan kelengkapan imunisasi dasar pada bayi, diperoleh nilai P Value 0,000 ($P \leq 0,05$). Hal ini menunjukkan secara statistis bahwa terdapat hubungan yang bermakna antara pengetahuan ibu dengan dengan kelengkapan imunisasi dasar pada bayi di wilayah kerja puskesmas bebesen.

Hasil penelitian yang dilakukan oleh Riri Novia Sumanti tahun 2017 Hasil uji statistik menggunakan uji chi square diperoleh nilai p= <0,001 (p<0,05) yang berarti ada hubungan antara pengetahuan dengan kelengkapan imunisasi dasar pada bayi.

Hubungan Sikap dengan Kelengkapan Imunisasi Dasar Pada Bayi

Berdasarkan data dari tabel 4.4 diatas dapat dilihat bahwa dari 63 responden (Ibu yang mempunyai bayi) yang mempunyai sikap positif dengan kelengkapan imunisasi dasar pada bayi yang lengkap sebanyak 34 responden (94,4%) sedangkan ibu yang bersikap positif dengan kelengkapan imunisasi dasar pada bayi yang tidak lengkap hanya 0 responden (0,0%), dan ibu yang bersikap negatif dengan kelengkapan imunisasi dasar pada bayi yang lengkap hanya 2 responden (5,6%). Sedangkan ibu yang bersikap negatif dengan kelengkapan imunisasi dasar pada bayi yang tidak lengkap sebanyak 27 reponden (100%).

Berdasarkan hasil uji statistik Chi Square dan pada derajat kepercayaan 95% dilakukan untuk mengetahui hubungan sikap ibu dengan kelengkapan imunisasi dasar pada bayi,

diperoleh nilai P Value 0,000 (P ≤ 0,05). Hal ini menunjukkan secara statistis bahwa terdapat hubungan yang bermakna antara sikap ibu dengan kelengkapan imunisasi dasar pada bayi di wilayah kerja puskesmas bebesen.

Menurut Notoatmodjo (2012), sikap mempunyai tiga komponen pokok yakini : a) kepercayaan (keyakinan), ide dan konsep terhadap suatu objek, b) kehidupan emosional atau evaluasi terhadap suatu objek, c) kecenderungan untuk bertindak (trend to behave). Ketiga komponen ini secara bersama-sama membentuk sikap yang utuh (total attitude). Dalam penentuan sikap yang utuh ini, pengetahuan pikiran, keyakinan, dan emosi memegang peranan penting. Sikap terdiri dari berbagai tingkatan, yaitu (a) menerima (receiving), (b) merespons (responding), (c) menghargai (valuing), (d) bertanggung jawab (responsible).

Hal ini juga sama dengan peneitian yang dilakukan oleh oleh Husaini (2016) di Puskesmas Runding Kota Subulussalam, yang menyatakan bahwa adanya pengaruh yang signifikan antara sikap ibu terhadap pemberian imunisasi dasar lengkap. Sejalan dengan penelitian yang dilakukan Agustina (2013) di Puskesmas Bagan Batu.

KESIMPULAN

Dari hasil penelitian yang dilakukan terhadap 63 Responden untuk mengetahui Hubungan Pengetahuan Dan Sikap Ibu Dengan Kelengkapan Imunisasi Dasar Pada Bayi di Wilayah Kerja Puskesmas Bies Kabupaten Aceh Tengah dapat disimpulkan bahwa :

1. Ada Hubungan Pengetahuan Dengan Kelengkapan Imunisasi Dasar Pada Bayi diperoleh nilai P Value 0,000 (P ≤ 0,05). Hal ini menunjukkan secara statistis bahwa terdapat hubungan yang bermakna antara Pengetahuan dengan kelengkapan imunisasi dasar pada bayi di wilayah kerja puskesmas bies.
2. Ada Hubungan Antara Sikap Dengan Kelengkapan Imunisasi Dasar Pada Bayi diperoleh nilai P Value 0,000 (P ≤ 0,05). Hal ini menunjukkan secara statistis bahwa terdapat hubungan yang bermakna antara Sikap dengan kelengkapan imunisasi dasar pada bayi di wilayah kerja puskesmas bies.

SARAN

1. Bagi Responden

Bagi Ibu diharapkan dapat meningkatkan kesadaran kepada keluarga akan pentingnya imunisasi bagi anak sehingga dapat meningkatkan dukungan keluarga terhadap kunjungan ibu untuk mengimunisasikan anaknya supaya terhindar dari ancaman penyakit.

2. Bagi Tempat Penelitian

Diharapkan kepada petugas kesehatan agar dapat meningkatkan pengetahuan, sikap masyarakat dengan melakukan penyuluhan dan penyebarluasan informasi tentang imunisasi dasar lengkap secara rutin dan berkala terutama ibu yang memiliki bayi serta keluarganya baik secara individu maupun kelompok.

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HUBUNGAN PENGETAHUAN DENGAN SIKAP IBU TERHADAP IMUNISASI TAMBAHAN

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ABSTRAK

Tingginya morbiditas dan mortalitas akibat penyakit yang seharusnya dapat dicegah dengan imunisasi, akibatnya penyakit yang dicegah oleh vaksin ini diperkirakan menyebabkan lebih dari dua juta kematian tiap tahun. Dari hasil studi pendahuluan di Wilayah Kelurahan Belian didapatkan pengetahuan ibu terhadap imunisasi 10 responden 7 diantaranya berpengetahuan kurang baik. Tujuan penelitian ini adalah untuk mengetahui Hubungan Pengetahuan dengan Sikap Ibu Terhadap Imunisasi Pada Balita Di Kelurahan Belian Tahun 2015. Penelitian ini bersifat survey analitik dengan pendekatan *cross sectional* menggunakan data primer dengan membagikan kuesioner. Penelitian ini dilakukan pada bulan April-Agustus 2015 dengan responden yang diteliti sebanyak 100 responden. Kemudian di analisis dengan menggunakan uji *Chi Square*. Hasil dari penelitian ini didapat hasil adanya hubungan pengetahuan dengan sikap ibu terhadap imunsasi tambahan pada balita dengan nilai p=0,010 < 0,05. Kesimpulan dari penelitian ini terdapat hubungan antara pengetahuan dengan sikap ibu terhadap imunisasi tambahan pada balita di kelurahan belian kota Batam Tahun 2015. Disarankan responden untuk meningkatkan pengetahuan ibu tentang imunisasi tambahan melalui penyuluhan dari tenaga kesehatan dan responden secara inisiatif mencari ataupun menerima informasi terkait dengan imunisasi tambahan pada balita

Kata Kunci : Pengetahuan, Sikap, Imunisasi tambahan

PENDAHULUAN

Imunisasi adalah kegiatan penting untuk melindungi masyarakat khususnya balita dari serangan beberapa penyakit infeksi. Hal ini disebabkan karena penyakit-penyakit seperti *tuberculosis, difteri, pertusis, tetanus, polio*, hepatitis B dan campak adalah penyakit yang cukup serius namun dapat dicegah dengan imunisasi (PD3I), imunisasi merupakan cara perlindungan terhadap penyakit infeksi yang paling efektif dan efisien terutama pada anak, sehingga anak dapat tumbuh dan berkembang tanpa ada gangguan. Sasaran program imunisasi adalah kelompok umur yang rentan terhadap penyakit infeksi antara lain seperti bayi, ibu hamil, anak usia sekolah.

Angka kematian balita berdasarkan *Survey Demografi* Kesehatan Indonesia (SDKI) tahun 2012 Angka Kematian Bayi (AKB) adalah 32 kematian per 1.000 kelahiran hidup dan Angka Kematian Balita (AKBA) adalah 40 kematian per 1.000 kelahiran hidup. Penyebab kematian bayi salah satunya adalah tetanus. *Tetanus neonatorum* merupakan penyebab utama kematian bayi dibanyak negara berkembang.

Imunisasi berguna untuk memberikan kekebalan terhadap tubuh anak dengan cara di Vaksin. Vaksin ini berasal dari bibit penyakit tertentu yang dapat menimbulkan penyakit, tetapi penyakit ini terelebih dahulu dilemahkan atau dimatikan sehingga tidak berbahaya lagi bagi kelangsungan hidup manusia. Pembuatan Vaksin berasal dari bibit penyakit yang dilemahkan misalnya virus campak dalam vaksin campak, virus polio, bakteri *Calmatte Guerin* dalam vaksin BCG, toksin (racun) yang dihasilkan oleh bakteri yang kemudian diubah menjadi *toxoid* misalnya tetanus, *toxoid* dalam vaksin TT, *difteri* dalam vaksin DPT atau DT.

Imunisasi wajib adalah imunisasi yang diwajibkan oleh pemerintah sesuai Program Pengembangan Imunisasi (PPI). Di Indonesia sendiri terdapat 5 imunisasi yang wajib antara lain BCG, Polio, Hepatitis B, DPT dan Campak. Sedangkan untuk imunisasi yang dianjurkan selain 5 imunisasi yang wajib tersebut, pemerintah juga menganjurkan imunisasi tambahan yaitu imunisasi Hib, PCV, Rotavirus, Influenza, MMR (*Measless, Mumps dan Rubella*), Tifoid, Hepatitis A, Varisela, HPV (*Human Papilloma Virus*).[6]

1) Dosen Prodi Kebidanan Fakultas Kedokteran Universitas Batam

Imunisasi anjuran merupakan imunisasi non program yang tujuan imunisasi anjuran tersebut pada umumnya yaitu untuk melindungi dan mencegah terhadap penyakit-penyakit menular yang sangat berbahaya bagi bayi dan anak ditahun-tahun awal kehidupannya. Imunisasi tambahan atau anjuran merupakan imunisasi yang dilakukan atas dasar ditemukannya masalah dari hasil pemantauan atau evaluasi. Kegiatan ini tidak rutin dilakukan, hanya karena ditujukan untuk penanggulangan penyakit tertentu. Sesuai dengan perkembangan pola hidup masyarakat dan kemajuan dalam bidang ilmu dan teknologi, akan terjadi pula perubahan dalam pola penyakit.

Pengetahuan seorang ibu akan mempengaruhi status imunisasi balitanya. Pengetahuan ibu tentang imunisasi anjuran akan membentuk sikap positif terhadap kegiatan imunisasi anjuran. Hal ini juga merupakan faktor dominan dalam keberhasilan imunisasi, baik yang dasar mau pun imunisasi anjuran. Dengan pengetahuan yang baik, maka dengan sendirinya ibu memiliki kesadaran untuk mengimunisasikan balita ketahap imunisasi selanjutnya yaitu imunisasi anjuran yang akan meningkatkan dan mempengaruhi status imunitas balita.

Berdasarkan survei pendahuluan yang peneliti lakukan dari 10 responden 7 diantaranya memiliki pengetahuan yang kurang baik tentang imunisasi tambahan pada balita.

Penelitian ini bertujuan untuk mengetahui hubungan pengetahuan dengan sikap ibu terhadap imunisasi tambahan

BAHAN DAN METODE PENELITIAN

Penelitian adalah penelitian *survei analitik* dengan rancangan penelitian yang digunakan adalah *cross sectional* (potong lintang) yang bertujuan untuk melihat hubungan antara variabel independen dengan variabel dependen pada waktu yang bersamaan, penelitian ini dilakukan di Kelurahan Belian di Kota Batam Tahun 2015 dan dilaksanakan di bulan April-Agustus 2015 di Kelurahan Belian Kota Batam Tahun 2015. Populasi yang digunakan dalam penelitian ini adalah ibu yang mempunyai Balita umur 1-5 tahun yang bertempat tinggal dikawasan Kelurahan Belian sebanyak 4.294 berdasarkan data dari Dinas Kependudukan Kota Batam, Teknik pengambilan sampel pada penelitian ini menggunakan teknik *Quota Sampling* yaitu pengambilan sampel secara *quota* dilakukan dengan cara menerapkan sejumlah anggota sampel secara *quotum* atau jatah, dan penentuan sampel menggunakan rumus slovin dan didapatkan sampel 100 responden dari populasi 4.294. alat ukur dalam penelitian ini menggunakan questioner terpimpin, dan analisa data menggunakan analisa univariat dan analisa bivariat.

HASIL PENELITIAN

Berdasarkan dari hasil penelitian didapatkan lebih dari separuh responden yang kurang baik di Kelurahan Belian sebanyak 58 responden (58%). Sedangkan ibu yang berpengetahuan baik di Kelurahan Belian sebanyak 42 responden (42%). dan di dapatkan lebih dari separuh sikap ibu terhadap imunisasi tambahan pada balita bersifat negatif berjumlah 52 responden (52%). Sedangkan yang bersikap positif berjumlah 48 responden (48%).

Hasil penelitian di dapatkan 58 responden yang memiliki balita dengan pengetahuan yang kurang baik, sebagian bersifat negatif sebanyak 38 orang (63,8%) dan dari 42 responden memiliki balita dengan pengetahuan baik sebagian besar bersifat positif yaitu 27 responden (60.9%). Bila dilihat uji *Chi-Square* didapat *p-value* 0,010 yang berarti *p-value* <0,05 sehingga Ha diterima. Dengan demikian dapat disampaikan bahwa ada hubungan antara Pengetahuan Dengan Sikap Ibu Terhadap Imunisasi Tambahan Pada Balita.

PEMBAHASAN

Hasil uji statistik *Chi-Square* diperoleh nilai *p-value* sebesar 0,010. Hal ini menunjukkan *p-value* < 0,05 yang berarti ada hubungan antara pengetahuan dengan sikap ibu terhadap imunisasi tambahan pada balita.

Pengetahuan responden yang baik memiliki sikap positif terhadap imunisasi tambahan disebabkan oleh informasi yang diperoleh oleh responden diserap dengan baik oleh responden dimana dengan memperoleh informasi yang baik maka semakin baik pengetahuan yang responden peroleh dari menerima atau mencari informasi terkait tentang imunisasi tambahan yang ibu miliki mempengaruhi sikapnya yang semakin positif.

Hal ini diperkuat dengan teori Notoatmodjo (2007) yang mengatakan

Informasi yang di peroleh dari berbagai sumber akan mempengaruhi tingkat pengetahuan seseorang. Bila seseorang banyak memperoleh informasi maka ia cenderung mempunyai pengetahuan yang lebih luas.

Selanjutnya, responden yang memiliki pengetahuan yang baik namun sikapnya tergolong negatif, hal ini disebabkan salah satu faktor yakni pengaruh seseorang yang dianggap penting yaitu orang tua, dimana responden senderung lebih mempercayai orang tuanya yang beranggapan dengan imunisasi dasar saja sudah cukup karena anggapan orang tuanya dianggap sudah mempunyai pengalaman sebelumnya dibandingkan dirinya, sehingga responden tersebut yang sudah memiliki pengetahuan yang baik, tetapi masih memiliki sikap yang kurang karena menganggap imunisasi tambahan tersebut kurang penting untuk balitanya.

Hasil penelitian ini sejalan dengan pendapat Notoatmodjo (2010) yang mengatakan bahwa sikap merupakan reaksi atau respons yang masih tertutup dari seseorang terhadap suatu stimulus atau objek. Menurut Bimo Walgito, 2001 (Sunaryo, 2004) sikap merupakan organisasi pendapat, keyakinan seseorang mengenai objek, yang disertai adanya perasaan untuk membuat respons atau berperilaku dalam cara tertentu yang dipilihnya.

Sedangkan responden yang memiliki pengetahuan yang kurang dan sikap yang positif cenderung kurang nya informasi yang ibu peroleh tentang imunisasi tambahan atau kurangnya inisiatif ibu untuk mencari informasi terkini mengenai imunisasi tambahan teteapi sikap ibu positif terhadap imunisasi tambahan bisa disebabkan karena sikap yang ibu tunjukkan mendukung yang dapat terbentuk dari adanya keyakinan ibu tentang pentingnya imunisasi bagi anaknya, pengalaman langsung ataupun tidak langsung yang di dapat ibu tentang imunisasi.

Dalam Saifuddin (2007) mengatakan bahwa sikap dikatakan suatu respon evaluatif, yang timbul apabila individu dihadapkan pada suatu stimulus yang menghendaki adanya reaksi individual, yang didasari oleh proses evaluasi dalam diri indvidu.

Kemudian responden yang memiliki pengetahuan yang kurang dan memiliki sikap yang negatif, hal ini disebabkan oleh kurangnya informasi yang diperoleh responden terhadap imunisasi tambahan seperti kurang aktifnya ibu untuk mencari informasi terkini menyenai informasi imunisasi tambahan, kemudian dipicu oleh pengaruh orang yang dianggap penting oleh responden tersebut yang mengsugesti ibu bahwa dengan imunisasi dasar saja balita sudah memiliki sistem imun yang baik.

Menurut M.Ali (2008) pengetahuan seorang ibu akan mempengaruhi status imunisasinya. Masalah pengertian dan pemahaman ibu dalam program imunisasi bayinya tidak akan menjadi halangan yang besar jika pengetahuan yang memadai tentang hal itu diberikan. Pengetahuan ibu tentang imunisasi akan membentuk sikap positif terhadap kegiatan imunisasi. Hal ini juga merupakan faktor dominan dalam keberhasilan imunisasi. Dengan pengetahuan baik yang ibu miliki maka kesadaran untuk mengimunisasikan balitanya akan meningkat yang mempengaruhi status imunisasi.

Menurut penelitian Insani (2009) semakin baik tingkat pengetahuan seseorang maka semakin mudah memahami informasi yang diberikan tenaga kesehatan mengenai efek samping imunisasi, sehingga responden dengan senang hati membawa bayinya untuk dilakukan imunisasi selanjutnya. hal ini dinyatakan dengan nilai p-value 0,002.

Berdasarkan pembahasan diatas menunjukan dengan pengetahuan yang baik sikap ibu yang muncul terhadap imunisasi tambahan adalah sikap positif, dan begitupun sebaliknya dengan pengetahuan yang kurang baik sikap ibu yang muncul terhadap imunisasi tambahan adalah sifat negatif. Pengalaman dan penelitian juga membuktikan bahwa praktek yang didasari oleh pengetahuan akan lebih langgeng dari pada praktek yang tidak didasari oleh pengetahuan. Serta sikap seseorang juga sangat banyak dipengaruhi oleh orang-orang yang dianggap penting, jadi jika responden menggaggap seseorang itu penting untuk dirinya dan untuk balitanya maka apa yang dilakukan atau dikatakan oleh sesorang tersebut cenderung akan di contoh atau dilakukan oleh responden tersebut.

SIMPULAN

Berdasarkan hasil penelitian didapatkan Ada hubungan antara pengetahuan dengan sikap ibu terhadap imunisasi tambahan

SARAN

Diharapkan kepada tenaga kesehatan agar lebih sering memberikan penyuluhan dan pendidikan kesehatan mengenai imunisasi dasar lengkap serta imunisasi non pemerintah atau imunisasi tambahan serta menyediakan vaksin imunisasi tambahan tersebut dan Diharapkan masyarakat terutama ibu yang memiliki balita untuk meningkatkan pengetahuannya secara mandiri tidak hanya tergantung pada tenaga kesehatan, yaitu dengan cara mencari informasi terkini mengenai imunisasi tambahan atau anjuran pada media cetak seperti buku, majalah, ataupun media elektronik dan bisa juga bertanyata kepada orang tua atau orang yang lebih berpengalaman. Dan ibu diharapkan juga mau mengikuti kegiatan-kegiatan yang diadakan tenaga kesehatan misalnn]ya penyuluhan, serta diharapkan ibu yang memiliki balita untuk ikut imunisasi balitanya untuk mencegah penyakit yang dapat dicegah oleh imunisasi tambahan

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Evaluating mothers' knowledge and attitude as a contributing factor to the low childhood immunization uptake in Ebonyi State, Nigeria

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Childhood immunization remains one of the most important and cost-effective public health interventions that reduces both morbidity and mortality associated with infectious diseases in children yet it is still underutilized. The study assessed the level of knowledge and attitude of mothers towards childhood immunization. This is a cross-sectional questionnaire-based study involving 141 mothers that brought their babies for vaccination at Alex Ekwueme Federal University Teaching Abakaliki, Nigeria. The data collected were analyzed using SPPS version 23. Only 40 (28.8%) had good knowledge of childhood immunization. Positive attitude towards immunization was seen in 139 (98.6%) mothers. 101 (71.6%) had missed vaccination appointments for their child with the far immunization center (50.0%) being the main reason given by the respondents. Age, parity of respondents, number of living children, educational status, and place of residence were significantly associated with knowledge of childhood immunization among the study participants ($p<0.05$). Majority of the mothers had poor knowledge of childhood immunization. Maternal educational status was a positive and the only significant ($p<0.05$) predictor of good knowledge of childhood immunization. It is recommended that information on immunization be taken to the door step of every mother, while intensifying optimized routine immunization sessions to daily vaccination at fixed post as well as integration of routine immunization with other health services.

Key words: Attitude, childhood, immunization, knowledge, maternal.

INTRODUCTION

Globally, vaccine-preventable diseases (VPDs) account for nearly 20% of deaths occurring in children under five years of age (World Health Organization, 2019). This makes childhood immunization one of the most important

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public health interventions and a cost-effective strategy that has reduced both the morbidity and mortality associated with infectious diseases in children (Babalola and Olabisi, 2004). Even though immunization is proven to be the most successful and cost-effective public health intervention in reducing childhood morbidity and mortality as it averts 2 to 3 million deaths every year, the global vaccination coverage has remained stalled at 86% since 2010, with no significant changes during the past years (World Health Organization, 2018). Of the estimated 19.5 million infants that were not reached with routine immunization services worldwide in 2016, 60% of them live in 10 countries including Nigeria (National Population Commission, 2014). According to the National Demographic and Health Survey 2018, vaccination coverage in Nigeria has improved over the past 10 years. The percentage of children aged 12-23 months who received all the basic vaccinations increased from 23% in 2008 to 31% in 2018; while the percentage of children who received none of the basic vaccinations declined from 29 to 19% during the same period. Although these trends show improvement in childhood vaccination coverage, they fall short of the Sustainable Development Goal 3, for which the target is achieving more than 90% coverage of all basic vaccinations among children aged 12- 23 months. Vaccination coverage among children aged 12-23 months is highest in Anambra (76%) and lowest in Sokoto (5%), with Ebonyi State having a coverage rate between 34 - 48% (National Population Commission, 2019).

Reports from studies have shown that uptake of immunization services depends not only on the provision of these services but also on knowledge and attitude of mothers, accessibility to immunization services, the density of health workers and the availability of safe needles and syringes (Torun and Bakirci, 2006; Anand and Bamighausen, 2007). Misperceptions of routine immunization, the influence of religion, inadequate cold chain equipment, rejection of routine immunization, health-worker and political factors, attitudes of community stakeholders and members, poor communication, funding constraints, shortage of vaccines and immunization supplies are other factors affecting optimal uptake of routine immunization in Nigeria (Ophori et al., 2014). Frequent communal conflict, difficult terrain, religious belief, lack of political will, and inadequate knowledge and negative attitude toward childhood immunization are frequent hindrances to vaccination in in most cities in Nigeria including Ebonyi State. A good attempt to address these factors may go a long way to improve vaccine utilization and subsequent protection of the children against childhood infectious diseases.

Mothers have an important role to play in child care, so their awareness and involvement are a necessity to implement programs for a child's wellbeing. Mothers with sufficient knowledge, a favorable attitude, and healthy practices toward a child`s overall development are good assets of our communities and nation. Assessing their knowledge and attitude towards childhood immunizations becomes an important step to understanding and addressing some of the factors that contribute to low uptake of childhood immunization (Vonasek et al., 2016). Therefore, this present study was carried out to assess the knowledge and attitude of mothers attending immunization clinics in a tertiary hospital in Ebonyi State. The findings obtained may serve as the basis for effective intervention.

MATERIALS AND METHODS

This was a cross-sectional descriptive questionnaire-based study that was conducted over 3 months at the Institute of Child Health (ICH) of Alex Ekwueme Federal University Teaching Hospital Abakaliki (AEFUTHA), Ebonyi State between August and October 2019. Mothers/caregivers who brought their babies for immunization during the study period and gave consent were recruited and enrolled in the study. Care was taken not to enroll any participant twice since most of them came for the subsequent immunization schedules.

Data were collected with the assistance of trained research assistants who were mainly nurses and resident doctors working in the institute using a standard structured questionnaire adapted from the previous studies (Awodele et al., 2010; Tagbo et al., 2012; Awosan et al., 2018) which had three sections on socio-demographic characteristics, knowledge on immunization and attitude towards childhood immunization. Knowledge and attitude were assessed using 8 stem questions some of which had multiple responses, resulting in a total of 15 questions. Each correct response was allotted a point. Knowledge was further dichotomized using half (7.5 points) of the maximum score as a cutoff into good (≥7. 6 points) or poor knowledge (≤7. 5 points). The attitude was also determined using 8 questions, each of which had 1 point for a favorable response. It was further categorized into positive (5-8 points) and negative (0-4 points), attitude. Ethical approval was obtained from the Research and Ethical Committee of Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi state while Informed consent was obtained from the participants.

The collected data were coded, entered in an excel sheet, and imported into SPSS software version 23 which was used for the analysis. The data were presented in frequency distribution tables with percentages. Chi-square statistics were used to test for association between the dependent variables (knowledge and attitude of the mothers towards childhood immunization) and independent ones such as socio-demographic characteristics. Multivariate analysis using the Binary Logistics Regression model was applied to determine the predictors of good knowledge of immunization among the mothers. Statistical significance was set at $p<0.05$.

RESULTS

Socio-demographic characteristics of respondents

Seventy-eight (55.3%) of the respondents were aged ≥40 years. Most of them, 139 (98%) were Christians. A total of 58 (41.1%) have had 1-4 pregnancies while 70

Table 1. Socio-demographic characteristics of respondents.

Variables	n (%)
Age (year)	
<30	36 (25.5)
30-39	27 (19.1)
≥40	78 (55.3)
Religion	
Christianity	139 (98)
Islam	1 (0.7)
Traditional	1 (0.7)
Parity of respondents	
1-4 pregnancies	58 (41.1)
5-8 pregnancies	49 (34.8)
>8 pregnancies	34 (24.1)
Number of living children	
1-4	70 (49.6)
5-8	60 (42.6)
>8	11 (7.8)
Marital status	
Single	4 (2.8)
Married	130 (92.2)
Separated	1 (0.7)
Widowed	6 (4.3)
Educational status	
None	40 (28.4)
Primary	36 (25.5)
Secondary	28 (19.9)
Tertiary	37 (26.2)
Place of residence	
Urban	42 (29.8)
Rural	99 (70.2)

(49.6%) have 1-4 living children. Majority 130 (92.2%) were married. Respondents residing in rural areas constituted 99 (70.2%) of the study population (Table 1).

Knowledge and attitude of mothers' regarding childhood immunization

All of the respondents had heard about childhood immunization. Health workers were the major source of knowledge for 72 (56.3%) mothers. Fear of general illness 119 (88.1%) was the main driving force for taking their children for vaccination. Only 40 (28.8%) had good knowledge of childhood immunization. Positive attitude towards vaccination was seen in 139 (98.6%) (Tables 2 and 3).

Relationship between socio-demographic characteristics and knowledge of immunization

Age, parity of respondents, educational status, and place of residence were significantly associated with knowledge of childhood vaccination among the study participants ($p<0.05$) (Table 4).

Table 2. Awareness and knowledge of mothers regarding childhood immunization.

Variable	n (%)
Have heard about immunization	
Yes	141(100)
No	0 (0.0)
Source of information on immunization	
Neighbor	24 (18.8)
School	19 (14.8)
Health worker	72 (56.3)
Radio	10 (7.8)
Television	4 (3.1)
Magazines	3 (2.3)
Family member	7 (5.5)
Reasons for taking a child for immunization	
Fear of general illness	119 (88.1)
Father asked me to bring the child	2 (1.5)
Due to school enrollment	2 (1.5)
The government says we must get it	2 (1.5)
Health care worker insists we must get it	7 (5.2)
Fear of death	
Grading of knowledge	
Poor	101 (71.6)
Good	40 (28.4)

Relationship between socio-demographic characteristics and attitude towards immunization

There was no significant association between socio-demographic variables and attitudes of the respondents towards childhood immunization (Table 5).

Predictors of good knowledge of immunization

Table 6 shows that though age groups were seen as positive predictors of good immunization knowledge, they were not statistically significant predictors ($p>0.05$), even though women who were 30-39 years (AOR =2.6) and ≥ 40 years (AOR = 3.7) had a higher likelihood of having good immunization knowledge compared to the younger mothers. The only significant predictor of good knowledge of immunization was a formal educational status ($p<0.05$) in which mothers who completed secondary or primary school were about 12 (AOR = 0.02); the timeless likelihood of having poor immunization knowledge compared to those who had no formal education. However, mothers who had tertiary education were about 3 times more unlikely to have poor knowledge compared to the uneducated, a finding that was not statistically significant.

DISCUSSION

This study investigated the level of mothers' knowledge and attitude towards childhood immunization at the institute of child health, Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Nigeria and found poor knowledge of childhood immunization among mothers that participated in the study. All respondents were aware that vaccines are given to under-five children. This may be because of a continuous campaign in the country on childhood immunization aimed at creating immunization awareness among the public to reduce morbidity and mortality arising from vaccine-preventable diseases. All mothers being aware of childhood immunizations mean that they are likely to disseminate this information which may lead to more women taking their children to hospitals for vaccination thereby increasing vaccine uptake rate. This is similar to reports by some researchers in Nigeria and beyond (Mapatano et al., 2008; Adeyinka et al., 2009; Awodele et al., 2010; Awosan et al., 2018; Adefolalu et al., 2019). A lower number of mothers being

Table 3. Attitude of mothers towards childhood immunization.

Variable	n (%)
Have missed vaccination appointment for my child	
Yes	101 (71.6)
No	40 (28.4)
Reason for my child missing immunization	
Vaccination centers very far	8 (50.0)
Busy at work	6 (37.5)
No health worker at the center	0 (0.0)
No vaccine at the center	2 (12.5)
Sent back by a health worker	0 (0.0)
Actions were taken to make up for my child's missed immunization	
Nothing	13 (46.4)
Returned to the health center for missed vaccine	14 (50.0)
Continued vaccination schedule without makeup for missed vaccine	1 (3.6)
The adverse effect that will prevent vaccination visit	
Presence of history of an allergic reaction to vaccine components	3 (6.8)
Prematurity	0 (0)
The child is very sick	39 (88.6)
Child circumcised	3 (6.8)
The child has jaundice	3 (6.8)
An adverse reaction seen following immunization	
Fever	56 (67.5)
Blindness	1 (1.2)
Swelling and redness	34 (41.0)
Convulsion	7 (8.4)
Allergy	0 (0.0)
Deafness	1 (1.2)
Inconsolable crying	3 (3.6)
Grading of attitude	
Positive attitude	139 (98.6)
Negative attitude	2 (1.4)

aware of childhood immunization was, however, found in a study done in Ethiopia (Birhanu et al., 2015).

As health care workers give health talks during the well-baby immunization clinic and antenatal care days, little wonder they constituted the major source of childhood immunization awareness among mothers in this study. This should be sustained in addition to optimizing other media of information dissemination on immunization such as radio jingles, town criers, and others to maintain this high level of awareness among mothers. This is comparable to the findings of other researchers in and outside Nigeria, where health workers were reported to be a major source of childhood immunization information to the mothers (Awodele et al., 2010; Birhanu et al., 2015; Vinish, 2016; Ramawat and Goswami, 2018). On the contrary, television was reported as the major source of information in other studies (Al-Lela et al., 2014; Ahmed et al., 2013).

Fear of general illness was the commonest reason for taking their children for vaccination. This was followed by the fear of death and insistence by health workers. This is likely to encourage mothers to regularly bring their children for vaccination as well as inform other mothers on the importance of childhood immunization against

Table 4. Relationship between socio-demographic characteristics and knowledge of immunization.

Variable	Level of knowledge (%)		
	Poor knowledge	Good knowledge	X^2 (P-value)
Age (year)			
<30	23 (63.9)	13 (36.1)	17.35 (0.00)*
30-39	12 (44.4)	15 (55.6)	
≥40	66 (84.6)	12 (15.4)	
Religion			
Christianity	100 (71.9)	39 (28.1)	FT (0.49)
Others	1 (50.0)	1 (50.0)	
Parity of Respondents			
1-4 pregnancies	36 (62.1)	22 (37.9)	7.47 (0.02)*
5-8 pregnancies	35 (71.4)	14 (28.6)	
>8 pregnancies	30 (88.2)	4 (11.8)	
Number of living children			
1-4 children	44 (62.9)	26 (37.1)	5.04 (0.08)
5-8 children	48 (80.0)	12 (20.0)	
>8 children	9 (81.8)	2 (18.2)	
Marital status			
Single	3 (75.0)	1 (25.0)	2.71 (0.44)
Married	91 (70.0)	39 (30.0)	
Separated	1 (100.0)	0 (0.0)	
Widowed	6 (100.0)	0 (0.0)	
Educational status			
None	35 (87.5)	5 (12.9)	25.65 (0.00)*
Primary	32 (88.9)	4 (11.1)	
Secondary	18 (64.3)	10 (35.7)	
Tertiary	16 (43.2)	21 (56.8)	
Place of residence			
Urban	22 (52.4)	20 (47.6)	10.91 (0.01)*
Rural	79 (79.8)	20 (20.2)	

*Statistically significant.

preventable diseases. Similarly, Tagbo et al. (2012) and Al-ela et al. (2014) reported fear of general illness as the major driving force of mothers for taking their babies for vaccination.

Surprisingly, majority had poor knowledge of childhood immunization having all been aware of it. One would have expected a greater percentage of the mothers to have demonstrated good knowledge of childhood immunization. Likely, having more of the respondents from rural locations and with limited education may have contributed to this finding. There is, therefore, a need for health workers to improve the content and quality of health talks delivered to these mothers as well as reach mothers in rural locations. A reward system should also be instituted to encourage mothers who pay detailed attention during such health talks. This finding is comparable to report given by Dharmaligman et al. (2017) and Jose et al. (2013) who studied similar population, but quite at variance with findings from other studies done in Nigeria and other countries (Al-Lela et al., 2014; Birhanu et al., 2015; Awosan et al., 2018; Konwea et al., 2018); Adefolalu et al., 2019).

Table 5. Relationship between socio-demographic characteristics and attitude towards immunization.

Variable	Level of attitude (%)		
	Positive attitude	Negative attitude	X^2 (P-value)
Age			
<30 years	36 (100.0)	0 (0.0)	1.67 (0.41)
30-39 years	26 (96.3)	1 (3.7)	
≥40 years	77 (98.7)	1 (1.3)	
Religion			
Christianity	137 (98.6)	2(1.4)	FT (1.00)
Others	2 (100.0)	0(0.0)	
Parity of Respondents			
1-4 pregnancies	58 (100.0)	0 (0.0)	2.59 (0.18)
5-8 pregnancies	47 (95.9)	2 (4.1)	
>8 pregnancies	34 (100.0)	0 (0.0)	
Number of living children			
1-4 children	70 (100.0)	0 (0.0)	2.51 (0.33)
5-8 children	58 (96.7)	2 (3.3)	
>8 children	11 (100.0)	0 (0.0)	
Marital status			
Single	4 (100.0)	0 (0.0)	4.53 (1.00)
Married	128 (98.5)	2 (1.5)	
Separated	1 (100.0)	0 (0.0)	
Widowed	6 (100.0)	0 (0.0)	
Educational status			
None	40 (100.0)	0 (0.0)	2.59 (0.35)
Primary	35 (97.2)	1 (2.8)	
Secondary	27 (96.4)	1 (3.6)	
Tertiary	37 (100.0)	0 (0.0)	
Place of residence			
Urban	40 (95.2)	2 (4.8)	FT (0.09)
Rural	99 (100.0)	0 (0.0)	

A reasonable number of mothers had missed their child's immunization with vaccination centers being far away from their house as the commonest reason. Being busy at the workplace and no available vaccine at vaccination centers also contributed. Mothers from a rural area with a limited number of health facilities and difficult terrain are likely to be affected here. Also, difficulty in transporting these vaccines to these areas may contribute to its limited availability. These highlighted reasons need to be addressed to ensure compliance with the vaccination schedule. Different researchers have reported husband's refusal, not remembering vaccination day, unaware of the need for vaccination, lack of vaccination information provided to parents by health workers and a child's illness as well as the unavailability of vaccines as the commonest reasons for the missing vaccine (Tagbo et al., 2012; Al-lela et al., 2014; Birhanu et al., 2015; Mugada et al., 2017; Awosan et al., 2018). Although some mothers took their babies back for vaccination, many of them did nothing after missing their child's vaccination. This creates a gap that should be addressed when providing information concerning childhood vaccination to mothers on the importance of catch-up vaccination following missed schedule as this will further strengthen compliance to immunization among mothers.

Despite many mothers' poor knowledge of childhood

Table 6. Predictors of good knowledge of immunization.

Variable	Wald statistics	p-value	AOR
Age group (year)			
<30			
30-39	0.98	0.32	2.56 (0.40 - 16.41)
≥ 40	3.10	0.08	3.71 (0.80 – 16.45)
Parity			
1-4 pregnancies			
5-8 pregnancies	0.28	0.60	0.51 (0.04 – 6.40)
>8 pregnancies	1.15	0.29	2.49 (0.45 – 12.16)
Number of children			
1-4 children			
5-8 children	0.30	0.59	0.49 (0.04 – 6.32)
>8 children	0.82	0.37	0.36 (0.04 – 3.33)
Level of formal Educational			
None			
Primary	6.17	0. 01*	0.12 (0.02 – 0.64)
Secondary	9.25	0.002	0.08 (0.02 – 0.41)
Tertiary	2.87	0.09	0.34 (0.01 – 1.19)
Place of residence			
Urban			
Rural	0.00	1.00	1.00 (0.25 – 3.95)

*The only significant predictor of good knowledge of immunization was maternal educational level (p<0.05).

vaccination in this study, they however, demonstrated a very good attitude towards immunization of their children.

This finding aligns with the reports of studies conducted in different parts of the world (Birhanu et al., 2015; Awosan et al., 2018; Ramawat and Goswami, 2018; Adefolalu et al., 2019).

In this study, a significant association was found between age, parity of respondents, educational status, place of residence, and mothers' knowledge regarding childhood immunization. It is also likely that older mothers and mothers with higher parity had more opportunities for more visits to hospitals and therefore receive more health talks on childhood immunization compared to younger respondents with lower parity levels. Also, those with higher educational levels may understand health talk information on childhood immunization, better than respondents with lower educational attainment. This may explain the reason for the observed significant association between educational level and knowledge of childhood immunization as more than half of respondents in this study either had no formal education or only attained primary level of education. Similarly, most researchers have reported a significant association between maternal education and knowledge of childhood immunization (Awodele et al., 2010; Birhanu et al., 2015; Dharmalingam et al., 2017; Mugada et al., 2017; Awosan et al., 2018; Ramawat and Goswami, 2018; Adefolalu et al., 2019). Besides, Birhanu et al. (2015), Adefolalu et al. (2019), and Ramavat and Goswami, (2018) noted maternal age and parity was significantly associated with mothers' knowledge regarding childhood immunization. Our findings are at variance with reports by other researchers (Jose et al., 2013; Vinish, 2016).

Only maternal educational level significantly predicted respondents' knowledge of childhood immunization. This finding is important in the design and implementation of childhood immunization programs. Thus, measures such as female education, adult literacy programs, health education campaigns, and new or improved immunization campaign delivery methods should be considered for raising immunization uptake in Ebonyi State, Southeast Nigeria.

Conclusion

This study shows that mothers had poor knowledge of childhood immunization. For the few mothers who knew

childhood immunization, their major sources of information were from health workers. The maternal educational level predicted good knowledge of childhood immunization. Far vaccination centers and being busy at work contributed to missed vaccination in their children. It is recommended that immunization information should be taken to the doorsteps of mothers, especially at various female gatherings. Optimization of routine immunization sessions should be intensified in every community with the implementation of daily immunization at every fixed post, weekly vaccination for outreach sessions, and monthly vaccination for mobile sessions. Also, the integration of routine immunization with other health services, reducing multiple hospital visits that will disrupt mothers' busy schedules is advocated. These measures may likely increase immunization awareness as well as improve its uptake in Ebonyi State, southeast Nigeria.

Limitations

This was a cross-sectional study with small sample size so the findings may not be generalized to the populace. Further research is needed to understand the respondents' perception of childhood immunization and factors that influence its uptake in Ebonyi State, Nigeria.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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Assessment of Knowledge and Practice of Childhood Routine Immunization among Mothers/Caregivers attending Primary Health Care Centres in Benin City, Edo State, Nigeria

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ABSTRACT: The ultimate goal of immunization is to reduce the incidence of vaccine preventable diseases by attaining high levels of routine immunization coverage with potent vaccines administered at the appropriate ages and at the right intervals. This study assessed the knowledge and practice of childhood routine immunization among mothers/caregivers attending Primary Health Care Centers in Benin City, Edo State. A descriptive cross-sectional study involving 640 females whose wards were receiving immunization in 35 PHCs in Benin City was carried out. Mothers who met the inclusion criteria were recruited using a pre-tested interviewer administered structured questionnaires using a multistage sampling technique. Relationship between dependent and independent variables was determined using logistic regression analysis, at 95% confidence interval and p-values level less than 0.05 were considered significant. Results shows that all the caregivers were aware of immunization. 498(77.8%) with the media being as source of information. A higher proportion of respondent (44.8%) had good knowledge while (38.6% and 12.6%), fair and poor knowledge of immunization respectively. BCG and OPV were the most known vaccines (89.1%), followed by HBV (77.8%), DPT and PENTA were known by 70.6% and 66.1% of respondents respectively. This study revealed good knowledge of immunization amongst the caregivers and good practice with regards to the actual purpose of immunization.

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Immunization is the process by which a person is made resistant to an infectious agent by the application of vaccines. Vaccine Preventable Diseases are a major cause of illness and deaths especially in developing countries and vaccines can significantly reduce childhood mortality and morbidity. (Salah *et al*., 2015) In Nigeria, immunization services (routine or supplemental) are provided through the primary health care system by the government to the populace. (Ekure *et al*., 2013) Routine immunizations are nationally scheduled regular administrations of vaccine dosages to infants at specified ages and require parents/caregivers taking the children to the health facility to receive age-appropriate doses of the antigens. This is done on specific days of the week to reduce vaccine wastage since most of the vaccines are supplied in multi-dose vials. (Zangeneh *et al*., 2011) Five visits are recommended by the National Programme on Immunization (NPI) to the health facility to enable the child receive one dose of Bacille Calmette Guerin (BCG) and Hepatitis B at birth, three doses of Oral Polio Vaccine (including one IPV), and three doses of Pentavalent vaccine, at six, ten and fourteen weeks and one dose of measles vaccine and yellow fever given at nine months of age. (Scott *et al*., 2014; FMOH, 2009) It is of importance that a child should receive all immunization at the appropriate ages and intervals in order to ensure maximal protection from vaccine preventable diseases. (Adedire *et al*., 2016; Sadoh and Eregie, 2009) The percentage of children who have receive the requisite number of vaccine doses irrespective of the age at receipt of the vaccine is used to calculate and determine vaccination coverage (Abdullraheem *et al*., 2011) and the third dose of pentavalent vaccine, is the key indicator to measure immunization programme coverage. (Mantua *et al*, 2016) At each visit the mother or caregivers is given appointment dates (written on the child's registration card) for the next vaccination. (Hannan, 2014) Despite this approach, knowledge, level of education, and religion of mothers have been reported as major contributory factors to low immunization coverage Nigeria, Africa and Asia (Onsomu *et al*., 2015; Maina *et al*., 2013; Subani *et al.,* 2015; Uzochukwu *et al*., 2004; Beaven *et al*., 2016; PAN, 2012) showed that mothers' knowledge,

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attitudes and practices on childhood immunization were at low levels. A research carried out in Nigeria reported that incomplete vaccination was due to maternal knowledge and attitudes, while partial immunization with multidose vaccines was more linked to problems with vaccination services. These factors have contributed to a fall in immunization coverage and upsurge of VPDs as well as failure to achieve the millennium development goal (MDG), and this has further worsened the country's infant mortality rate of 69/1000 and under five mortality of 128/1000. (NDHS, 2013) This study assessed the knowledge and practice of childhood routine immunization among mothers/caregivers attending primary health care centers in Benin City, identified factors contributing to mother's/ caregiver's knowledge of immunization and areas needing attention.

MATERIALS AND METHODS

This was a descriptive cross-sectional study carried out in 35 Primary Health Care facilities across the three Local Government Areas in Benin City, Edo State, Nigeria. It was conducted among 640 mothers who met the inclusion criteria using a multistage sampling technique. Sample size were determined using the (Cochrane, 1977) formula for studying single proportion. $n = (Z)^2pq\ (deff)/\ d^2$ where p is prevalence of 51.0%, the proportion of mother's knowledge of immunization from a study carried out in 2019 in Lagos, Nigeria. (Adefolalu *et al*., 2019) The respondents were selected using multistage sampling technique consisting of three stages from the 3 LGA (Oredo, Ikpoba Okha and Egor. Two wards were selected from each of the 3 LGAs (Oredo, Egor, and Ikpoba Okha) using simple random sampling technique, by balloting from the list of wards obtained from the PHC department in each LGA, making a total of 6 wards, then all the PHCs within the selected 6 wards were used for the study. Systematic sampling technique was used to select the mothers/caregivers, after determining the sampling internal and this was used to select the mothers until the sample size was achieved.

Survey questionnaire for mothers/caregivers: A pretested structured interviewer administered questionnaire was retrieved, screened for completeness, coded and entered into the IBM statistical package for social sciences (SPSS) statistics 21.0 software. The categorical variables were presented as frequencies and percentages while numerical variables that were normal in distribution was expressed as mean (standard deviation). The Chi-squared test of association was used to test statistical association between socio-demographic variables of the respondents and the knowledge of immunization, knowledge and practice of immunization. The Fisher's exact test was used in instances where the total expected cell frequencies less than five is more than 20%. The binary logistic regression was modelled to explore and identify significant predictors of routine immunization services at the Primary Health Facilities in the LGAs. The level of significance was set at $p< 0.05$. Socio-economic classes of the respondents were scored based on the mother's/caregivers' level of education and their husband's occupation. Six questions in the maternal questionnaire were used to assess knowledge. Each correct response on knowledge was given a score 1 while incorrect response a score of 0, giving a maximum and minimum score of 0 and 6, respectively. It was converted to percentages and classified as: Poor knowledge: less than 50%, Fair knowledge: 50 - 74.9% and Good knowledge: 75 % and above. Ethical clearance to conduct this research was sought and obtained from the University of Benin Teaching Hospital Ethics and Research Committee. Permission was sought from the Permanent Secretary, Edo State Hospital Management Board and Chairpersons of the Local Government Areas. Institutional permission was sought and obtained from the Primary Health Care Coordinators, and Heads of the health facilities. Health education was given to the mothers after the data collection and those whose child were ill referred to the hospital.

RESULTS AND DISCUSSION

The socio-demographic characteristics of mother/caregivers is presented in table 1. Three hundred and thirty-two (51.9%) were 30 – 39 years old with mean age and (SD) of respondents was 32.1 (7.1). Six hundred and twenty-nine (98.3 %) were the mothers of the index child, 17 (2.6%) were single, with 409 (63.9%) having secondary level of education. All the care givers (Table 2) were aware of immunization. Six hundred and seven (94.8%) reported healthcare practitioners as their source of information, with BCG and OPV the most known vaccine mentioned by 570 (89.1%) of the caregivers then DPT and PENTA as mentioned by 452 (70.6%) and 423 (66.1%) respectively.

Three hundred and fifteen (49.2%) were aware of seven or more vaccines while 610 (95.3%) stated that nine months was the age of completion of vaccination while some caregivers were of the opinion 21 (3.3%) that immunization makes children grow fast. In figure 1, we observed that three hundred and twelve (48.8%) of the caregivers had good knowledge scores while 247 (38.6%) had poor knowledge while 81 (12.6%) had fair knowledge.

Table 1: Socio-demographic characteristics of mother/caregivers

Variable	Frequency (n = 640)	Percent
Age (years)		
< 20	7	1.1
20 – 29	232	36.3
30 – 39	332	51.9
40 – 49	59	9.2
≥50	10	1.6
Relationship with child		
Mother	629	98.3
Grand parents	9	1.4
Aunt	2	0.3
Marital status		
Single	17	2.6
Married	615	96.1
Cohabiting	1	0.2
Separated/ divorced	4	0.6
Widowed	3	0.5
Household size		
≤ 4	264	41.3
5 – 8	357	55.8
≥ 9	19	3.0
Level of education		
No formal education	6	0.9
Primary	180	28.1
Secondary	409	63.9
Tertiary	45	7.0
Employment status		
Employed	555	86.7
Unemployed	85	13.3
Occupation (n = 555)		
Professional	23	4.1
Middle class	166	29.9
Unskilled	366	66.0
Spouses' level of education* (n = 632)		
No formal education	1	0.2
Primary	68	10.8
Secondary	452	71.5
Tertiary	111	17.5
Spouses' occupation* (n = 632)		
Professional	23	3.6
Middle class	397	62.8
Unskilled	212	33.5

*Mean age = 32.1± (7.1) years; *Included information of spouses of single caregivers who contributed financially to the upkeep of the index child.*

All the caregivers reported vaccinating the index child. Six hundred and twenty-five (97.7%) presented with their vaccination cards while 15 (2.3%) had vaccination cards but presented without them. Six hundred and thirty (98.4%) of the index children had received BCG, all received the first doses of OPV, PENTA and PCV and smaller proportion received measles and yellow fever vaccines [118 (72.4%) and 119 (73.0%) respectively]. There was no statistically significant association between the age of the child and the caregivers' knowledge of immunization (p = 0.853), neither was the association of More than half 161 (52.1%) of the caregivers with female index children having good knowledge of immunization compared to 151 (45.6%) of those with male children. (p = 0.214). Two hundred and fifty-two (50.7%) of the caregivers who delivered in hospitals had good knowledge of immunization compared to 53 (44.2%) of those who delivered at home. This association was also not statistically significant (p = 0.230) and this was also the case among 10 (58.8%) of the single caregivers who had good knowledge of immunization compared to 299 (48.6%) of those who were married. (p = 0.655). One hundred and eighty-seven (52.4%) of caregivers with household sizes of 5 – 8 had good knowledge of immunization compared to 8 (42.1%) of those with household sizes of 9 or more. This association was statistically significant (p = 0.021). Twenty-two (81.5%) of the caregivers with tertiary level of education had good knowledge of immunization compared to 41 (48.2%) of those with no formal education. This association was also statistically significant (p = 0.042).

Table 2: Mothers/caregivers' knowledge of immunization

Variable	Frequency (n = 640)	Percent
Awareness of immunization		
Aware	640	100.0
Source of information*		
Healthcare practitioner	607	94.8
Media	498	77.8
Friends	435	68.0
Relatives	344	53.8
Vaccine mentioned*		
BCG	570	89.1
OPV	570	89.1
HBV	478	74.7
DPT	452	70.6
PENTA	423	66.1
Measles	335	52.3
PCV	315	49.2
Yellow fever	315	49.2
Number of vaccines mentioned		
0	66	10.3
1 – 6	259	40.5
≥ 7	315	49.2
Knowledge of expected age of completion		
9 months	610	95.3
12 months	17	2.7
15 months	6	0.9
18 months	7	1.1
Knowledge of the purpose of immunization		
Makes child brilliant	16	2.5
Prolongs life	18	2.8
Prevents diseases	585	91.4
Makes child grow fast	21	3.3

**Multiple responses*

All mothers/caregivers had heard about routine childhood vaccines under the national immunization schedule. This finding is in tandem with the observation in a study done in Lagos, where also high maternal awareness of immunization was recorded. (Odusanya *et al*, 2009) However, the current finding is in contrast with that contained in a study done in Ambo, Ethiopia (Birhann *et al*., 2015) where the awareness of immunization was poor. This disparity

between findings in this study and the Ethiopian study may be due to the differences in information, education and communication (IEC) programmes of the two countries or due to the location and accessibility of the mothers to health care services. Majority of the respondents in the Ethiopian study were in the rural areas while this study was made up of respondents from both urban and rural areas.

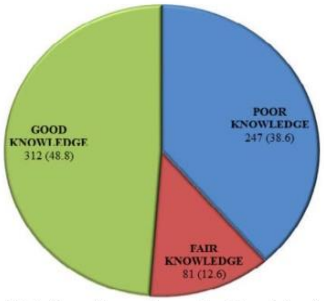

Fig 1: Composite score for caregivers' knowledge of immunization

Table 3: mothers' practice of immunization

Variable	Frequency (n = 640)	Percent
Ever vaccinated child		
Yes	640	100.0
No	0	0.0
Possession of vaccination card		
Yes and seen	625	97.7
Yes but not seen	15	2.3
No	0	0.0
Vaccination coverage based on age*		
BCG (n = 640)	630	98.4
OPV1 (n = 640)	640	100.0
OPV2 (n = 520)	520	100.0
OPV3 (n = 399)	398	99.7
PENTA1 (n = 640)	640	100.0
PENTA2 (n = 520)	520	100.0
PENTA3 (n = 399)	359	90.0
PCV1 (n = 640)	640	100.0
PCV2 (n = 520)	505	97.1
PCV3 (n = 399)	338	84.7
Measles (n = 163)	118	72.4
Yellow fever (n = 163)	119	73.0

Dropout rate (BCG/Measles) = 26.0%; Dropout rate (PENTA1/Measles) = 19.5%; Dropout rate (PENTA1/PENTA3) = 10.0%

All mothers/caregivers knew about BCG and OPV vaccines. This level of awareness for these vaccines noted in this study is higher than the level of awareness of OPV reported from Niger (Kobayashi *et al*., 2003) but comparable to the high level of awareness of same vaccines in in Nairobi, Kenya (Kamau and Esamai, 2009) This finding can be attributable to the National Supplementary Immunization plus days which is aimed at improving coverage for OPV and eradicating the polio disease from the Integrated Diseases, Surveillance and Response (IDSR). The constant jingles being aired on television and radio to improve utilization of immunization and also proximity of the time of delivery to the vaccine scheduled early in the NPI schedule may also have contributed to the high level of awareness for OPV.

Awareness level for recently introduced vaccines, such as pentavalent vaccine, pneumococcal conjugate vaccine, and those given at the end of the immunization schedule (measles and yellow fever vaccines), were slightly lower compared to the other vaccines in the routine immunization schedule. This observation could be as a result of time lag between the two sets of vaccines which could cause mothers to forget the measles vaccine and dropout or not follow through with subsequent doses. Just as the vast majority of the people have been sensitized with regards to OPV, other vaccines should also be given similar have treatment. Such enlightenment requires health promotion in the form of health education where persuasive communications are utilized in passing the information on to the people. The message in such a manner that the content is comprehended and accepted by the people with the effect that mothers are urged to present their wards for immunization including those given late in the NPI schedule. This high level of caregiver's awareness of immunization could have resulted from the aggressive health education carried out by health workers in health care centers, to peer group influence and general community participation in routine immunization. This is corroborated by the finding that healthcare practitioners were the commonest source of information followed by the mass media and friends.

The current finding is consistent with the study done in Addis Ababa where health workers were also the main source of information. (Birhann *et al*., 2015).

This trend may be attributed to the fact that vaccination information is usually given to mothers by healthcare professional just before giving vaccines to the children during each immunization sessions and postnatal visits. The finding is further substantiated by findings noted in studies done in Nigeria (Odusanya *et al*, 2009; Ibraheem *et al*., 2016) and Saudi Arabia. (Yousif *et al*., 2013) Friends and family members were also noted as important sources of information on immunization but their knowledge of immunization needs to be strengthened.

Table 4: knowledge of immunization and the socio-demographic characteristics of index child and their caregivers

Variable	Knowledge of immunization			Test statistic	p value
	Poor (247) n (%)	Fair (81) n (%)	Good (312) n (%)		
Child age (months)					
0 – 5	185 (38.8)	59 (12.4)	233 (48.8)	F = 2.636	0.853
6 – 11	53 (40.5)	16 (12.2)	62 (47.3)		
12 – 17	7 (25.9)	5 (18.5)	15 (55.6)		
18 – 23	2 (40.0)	1 (20.0)	2 (40.0)		
Sex of index child					
Male	138 (41.7)	42 (12.7)	151 (45.6)	$\chi^2 = 3.084$	0.214
Female	109 (35.3)	39 (12.6)	161 (52.1)		
Place of delivery					
Hospital	182 (36.6)	63 (12.7)	252 (50.7)	$\chi^2 = 5.610$	0.230
Home	52 (43.3)	15 (12.5)	53 (44.2)		
TBA	13 (56.5)	3 (13.0)	7 (30.4)		
Age (years)					
< 20	4 (57.1)	0 (0.0)	3 (42.9)	F = 19.194	**0.038**
20 – 29	93 (40.1)	41 (17.7)	98 (42.2)		
30 – 39	131 (39.5)	29 (8.7)	172 (51.8)		
40 – 49	17 (28.8)	10 (16.9)	32 (54.2)		
50 – 59	0 (0.0)	0 (0.0)	3 (100.0)		
≥ 60	2 (28.6)	1 (14.3)	4 (57.1)		
Marital status					
Single	4 (23.5)	3 (17.6)	10 (58.8)	F = 6.006	0.655
Married	238 (38.7)	78 (12.7)	299 (48.6)		
Cohabiting	1 (100.0)	0 (0.0)	0 (0.0)		
Separated/divorced	3 (75.0)	0 (0.0)	1 (25.0)		
Widowed	1 (33.3)	0 (0.0)	2 (66.7)		
Household size					
≤ 4	108 (40.9)	39 (14.8)	117 (44.3)	$\chi^2 = 11.590$	**0.021**
5 – 8	134 (37.5)	36 (10.1)	187 (52.4)		
≥ 9	5 (26.3)	6 (31.6)	8 (42.1)		
Level of education					
No formal education	35 (41.2)	9 (10.6)	41 (48.2)	$\chi^2 = 13.085$	**0.042**
Primary	142 (38.8)	48 (13.1)	176 (48.1)		
Secondary	66 (40.7)	23 (14.2)	73 (45.1)		
Tertiary	4 (14.8)	1 (3.7)	22 (81.5)		
Socioeconomic status					
Class I	0 (0.0)	0 (0.0)	2 (100.0)	F = 9.782	0.242
Class II	5 (22.7)	1 (4.5)	16 (72.7)		
Class III	54 (41.5)	20 (15.4)	56 (43.1)		
Class IV	132 (40.6)	40 (12.3)	153 (47.1)		
Class V	56 (34.8)	20 (12.4)	85 (52.8)		

Statistically significant

More than three quarters of the caregivers received information on immunization from the media (television, radio, internet and newspapers). Television is an important source of health information because it is available in most homes and it is more convenient for caregivers to watch medical programmes than use the internet or obtain information by reading. The study revealed good knowledge of immunization among the caregivers with regards to true purpose of immunization and age of completion of vaccination. This value noted in this study are higher than those obtained in a study involving a rural Nigeria community and Ethiopia (Birhann *et al*., 2015) where only half of the mothers mentioned correctly the time of completing immunization (at nine months or before the first birth day). The variation in these findings noted between this study and others may be due to the difference in characteristics of the study participants 'particularly educational attainment since about 70% of mothers included in the study in rural Nigeria were illiterates, higher than the illiteracy rates in this study. Most of the caregivers in the other study had at least primary school education. Despite the fact that caregivers had good knowledge of the age and time of completion of vaccination, few caregivers felt that routine immunization improves the growth and intelligence of children. A similar find has been noted among mothers involved in the rural Nigeria study [8] where it was observed that less than a quarter of the respondents correctly stated the purpose of immunization but in contrast with findings from an Enugu based study (Tagbo, *et al*., 2012) where majority of the respondents mentioned the purpose of immunization correctly. The implication of this is that though some had incorrect knowledge of immunization they nevertheless regarded immunization to be beneficial.

Table 5: Bivariate regression analysis of the predictors of caregivers' knowledge of immunization

Predictors	B (regression coefficient)	p-value	Odd Ratio	95% C.I. for Odd ratio Lower	Upper
Child age					
≤3 months*					
≥4 months	0.057	0.744	1.059	0.752	1.490
Delivery place					
Hospitals	0.357	0.071	1.430	0.970	2.108
Others*					
Age (years)					
< 40*					
≥ 40	0.514	0.075	1.672	0.950	2.942
Marital status					
Ever married*					
Never married	0.293	0.567	1.341	0.490	3.668
Household size					
≤ 4*					
> 4	0.099	0.557	1.104	0.794	1.536
Level of education					
Primary or less*					
Secondary/tertiary	0.135	0.620	1.145	0.671	1.954
Employment					
Yes*					
No	0.126	0.612	1.134	0.698	1.842
Socioeconomic status					
Classes I – III	0.117	0.681	1.125	0.642	1.969
Classes IV and V*					
Constant	-0.187	0.644	0.830		

**Reference category, Coefficient of determination (R^2) = 1.4% – 1.9%; C.I = confidence interval; There were no statistically significant predictors of knowledge of immunization among the socio-demographic characteristics of the respondent Which shows that for every increase in age of the child there was no increase in the caregiver's knowledge of routine immunization with a p=0.744 with odds of 1.059 (0.752-1.490)*

Health workers could leverage on the observed trend to educate the mothers on the true essence of immunization and its added benefits through the correct use of information, education, and communication materials available on immunization as a rationale for immunization rather than use only images of children known to have suffered from vaccine preventable diseases/ historic images relating to disease outbreaks. Over half of the mothers/caregivers were unaware of the full range of vaccines routinely administered to children in Nigeria. This observation is worrisome as it may suggest that immunization campaigns are suboptimal in spite of the WHO 2010 plan to improve massive cross regional vaccination campaigns. (FMOH, 2011)There could therefore be some knowledge gaps warranting the need for improved health education during ant-postnatal care and immunization activities, perhaps using improved community participation, mass mobilization, and retraining of community health workers.

The significantly higher level of knowledge found amongst mothers/caregivers with secondary and higher level of education is expected as they are better placed to understand relevant health information more readily than those with lower level of education. An optimal female literacy level is desirable as this could lead to comprehension of exposure to other social and cultural factors that influence utilization of routine immunization services. Higher educational level was also associated with enhanced knowledge of routine immunization as noted in this study. This may partly be attributed to the quality of information provided to mothers at the health facilities (both during antenatal and immunization clinics by health workers) comprehended better by this cohort of mothers/ caregivers.

All the caregivers reported vaccinating the index child and presented their vaccination cards. Most of the index children were completely immunized for age with an immunization coverage of eight five percent. Similar rates had been reported in India (Hamid *et al*., 2012) and Ethiopia (Lakew *et al*., 2015) where majority of the children were completely immunized for age. The current finding is however at variance with the lower immunization rates of less than twenty-five percent obtained from some Nigeria studies (FMOH, 2008; FMOH, 2011) and another carried out in Ethiopia (Etana and Derressa, 2012). The discrepancy in coverage rates may be due to social and cultural factors. Nonetheless the high coverage rate noted among the children in this study is in excess of the goals of the Global Immunization Vision and Strategy (GIVS) which set at least 80% vaccination coverage in every district.(FMOH,2011) The coverage rate of 85% noted in this study is different from values

obtained in a study carried out in Edo State where immunization coverage according to the NDHS 2013, was 52% and other studies conducted in the Southern part of Nigeria that also fell short of the GIVS goal. The disparity in immunization coverage within the country may reflect the variation in effectiveness of immunization campaign in various localities outside other influences as vaccine supplies, level of literacy, employment and poverty.

Conclusion: knowledge and practice of immunization in this study was good although they were not as significant to what was expected due to the rigorous health education which occurs before immunization sessions daily and the yearly routine and supplementary immunization campaign by the federal and state government, also emphasis need to be given to educating and empowering the girl child and also raising awareness on family planning to enable improvement in the immunization coverage.

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Research article

Knowledge and attitudes towards maternal immunization: perspectives from pregnant and non-pregnant mothers, their partners, mothers, healthcare providers, community and leaders in a selected urban setting in South Africa

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ABSTRACT

Background: Maternal immunization has prevented millions of child deaths globally; nevertheless, incomplete vaccination remains a public health concern in South Africa, where almost half of child deaths occur during neonatal period. This study explored the knowledge and attitudes inhibiting vaccine acceptancy during pregnancy.

Methods: Key informant and semi-structured interviews were conducted with pregnant women receiving antenatal care at community clinics, antenatal care staff, women enrolled in maternal immunization trials, community leaders and non-pregnant women residing in Soweto. Focus Group Discussions were also held with the mothers and husbands/partners of the pregnant women (n = 55).

Results: The study established good knowledge, a positive attitude and high acceptability of maternal immunization among pregnant women, non-pregnant women, antenatal staff as well as church and community leaders. Men were the least positive about maternal immunization. Aside from antenatal staff, there was poor knowledge regarding the types of vaccinations administered and the health benefits of immunization across all the study groups. Reasons adduced for poor knowledge about the types of vaccinations include lack of communication on maternal immunization during antenatal sessions or clinic visits and power dynamics that tend to exist between healthcare workers and patients.

Conclusion: Ensuring that healthcare workers provide useful information on immunization during antenatal visits as well as include men in education sessions regarding the benefit of vaccination may increase patients' confidence and immunization uptake.

1. Introduction

There has been substantial progress in reducing the burden of child mortality globally. Since 1990, under-five mortality has reduced from 12.6 million to 5.3 million in 2018 (WHO, 2020a,b). In 2018, the WHO European region recorded 9 deaths per 1000 live births (WHO, 2020a). However, the risk of under-five mortality remains high in Sub-Saharan Africa and low income countries. For the same year (2018), the rate of under-five mortality was 76 deaths per 1000 live births in sub-Saharan Africa (WHO, 2020a). In South Africa, under-five mortality was 33.8 deaths per 1000 live births in 2018 (UNICEF, 2020). Goal 3 of the United Nation's (UN) Sustainable Development Goals (SDGs) aims to reduce under-five mortality to 25 deaths per 1000 live births across all countries by the year 2030 all countries. To achieve this target, countries; particularly in the sub-Saharan region; need to strengthen their commitments.

Maternal immunization has been utilized for decades as a method for protection of pregnant mothers, their unborn and new born child from severe infectious diseases (Gerdts, van Drunen Littel-van den Hurk and

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Potter, 2016). Several vaccines are currently being recommended and used in pregnant women, including tetanus toxoid, influenza and pertussis vaccines (Böhm et al., 2019). For example, the South African National Institute for Communicable Diseases (NICD) recommends inactivated influenza vaccine to be administered to all pregnant women at any stage of pregnancy (Walaza 2014). Table 1 presents the South African immunization schedule for pregnant women.

In 2002, South Africa eliminated neonatal and maternal tetanus by obtaining < 1case per 1000 live births in every district (NICD 2020). Since then, the global uptake of diphtheria, tetanus and pertussis (DTP) was at 85% in 2019 (WHO 2020). Recent data shows that an estimated 84% and 77% of infants respectively received the first and third dose of diphtheria, tetanus toxoid and pertussis vaccine in South Africa.

It is estimated that about 86% of infants worldwide received three doses of diphtheria-tetanus-pertussis (DTP) in 2016 (WHO, 2017). Given the benefits accrued in tetanus immunization, low-resource countries began implementing tetanus vaccination programmes for pregnant women (Giles et al. 2018). As a result, maternal immunization, in combination with better surveillance and hygienic practices, has reduced the global tetanus mortality rate by more than 94% (Ridpath et al., 2017).

Studies conducted in the UK, US and Spain have confirmed more than 90% effectiveness of maternal pertussis vaccination in preventing pertussis infection among infants 12 weeks and younger (Baxter et al., 2017; Bellido-Blasco et al., 2017; Dabrera et al., 2015; Amirthalingam et al., 2016). In South Africa, while pertussis infection is increasingly common among infants, tetanus toxoid is the only maternal immunization that is recommended to pregnant women to prevent neonatal tetanus infection (Dangor and Lala, 2016). Evidence shows that maternal influenza vaccine is effective in preventing influenza illness in both pregnant women and infants (Fell et al., 2017). However, some countries continue to experience challenges regarding the implementation of maternal influenza vaccination programmes. Poor availability of resources and a reluctance of pregnant women to accept vaccination due to fears about adverse impact on foetal development and health have been mentioned as major barriers to the achievement of national and international targets on maternal and child health (Ortiz et al., 2012; Greenwood 2003; Munoz and Patricia 2013).

Moreover, research has shown that maternal knowledge, attitudes and beliefs play a substantial role in vaccine hesitancy (Larson Williams et al., 2018). However, research conducted in Zambia found that although mothers had poor knowledge about vaccines, they expressed positive attitude about maternal and child immunization (Larson Williams et al., 2018). For some women, traditional and religious practices inhibited the use of vaccines and/or western medicine (Larson Williams et al., 2018). A number of studies have confirmed that healthcare providers are an integral part in providing maternal information to women (Ellingson and Chamberlain 2018; Wilson et al., 2015). In the Zambian study, paternal and community rumours also had a significant influence on women's attitudes regarding immunization (Larson Williams et al., 2018). Lessons from more developed countries have shown that achieving vaccine acceptance among pregnant women and maternity healthcare professionals (HCPs) remains a considerable public health challenge (Bisset and Paterson 2018). Concerns have further risen about the paucity of research regarding the knowledge, attitudes and beliefs towards maternal immunization in low resource settings (Maher et al., 2014).

Table 1. Immunization Schedule of current and future vaccines in South Africa.

Vaccine description	Schedule
Tetanus Toxoid (TT)	1st pregnancy; proceeding 6 months; year 1; year 2
Influenza	Prior or during flu season
Pertussis	During the 27th through 36th week of each pregnancy
Group B Streptococcus	Under investigation
Respiratory Syncytial Virus (RSV)	Under investigation
HIV	Under investigation
Covid-19	Under investigation

In order to achieve optimal success in current immunization programmes (administering of maternal influenza and pertussis), expand immunization programmes to include new vaccinations such as Group B streptococcus (GBS) and Respiratory Syncytial Virus (RSV) and strengthen our commitments to reduce under-five mortality to as low as 25 deaths per 1000 live deaths, it is important to obtain buy-in from all relevant stakeholders (pregnant women, maternal healthcare professionals and community members) regarding the importance of maternal immunization (Krishnaswamy et al. 2019).

In this study, we aimed at understanding knowledge, attitudes and acceptability of maternal immunization amongst pregnant and non-pregnant women, mothers and partners of these women, healthcare providers, and community members in selected urban (Soweto, Gauteng) settlements in South Africa. The use of exploratory methods is particularly important because conventional questionnaires on maternal immunization often use a "yes/no/don't know" answer format and aim to provide frequency and percentage distributions as explanations for uptake or the lack of (Awadh et al., 2014). Conventional questionnaires lack the ability to capture and explain why people think or act as they do and most questionnaires on the acceptability of immunization are often administered to women and exclude other decision influencers such as partners, parents or the larger society in which people reside (Kitano et al., 2019). Using open-ended questions to understand decision making and behaviour is important and can better assist healthcare professionals and policy makers to understand and address existing barriers to maternal immunization uptake. While the questions in SSIs are presented in a predetermined format and sequence, they allow some flexibility in the way a topic is addressed by both the interviewer and respondent. In this study, respondents were encouraged to share their thoughts and ideas rather than providing "yes" or "no" type of answers. The results in this study are part of a larger study that aims to understand the acceptability of maternal immunization in both urban and rural (Mtubattuba, KwaZulu-Natal) settlements in South Africa. These findings are important for increasing acceptancy of current and future immunization programmes essential for informing larger studies in similar and/or different contexts on acceptable entry points to introduce future immunization programmes.

2. Methods

2.1. Context

The study was conducted in Soweto (South-Western Township). Soweto is a congregation of 29 townships within the Johannesburg Metropolis in South Africa. It is inhabited by a low-income, urbanized Black-African community of Zulu, Xhosa, Pedi, Tsonga, Venda, Tswana and Sotho ethnicities (STATS-SA, 2012), mainly of Christian religious background (mostly Protestant and Charismatic). The total population is 1.4 million people, of whom 125,000 are under-5 years of age.

2.2. Study design and sampling strategy

We designed a qualitative exploratory study to explore the knowledge, attitudes and acceptancy of maternal immunization. Semi-structured questionnaires were developed. The qualitative data was collected through the use of semi-structured interviews (SSIs), key informant interviews (KIIs) and focus group discussions (FGDs). These methods were used in order to carefully explore the views and concerns emanating from the selected sample regarding maternal immunization uptake and acceptability. A combination of purposive and snowball sampling techniques was employed to identify potential respondents. Purposive sampling was used to select pregnant women receiving antenatal care at

community clinics, women enrolled in maternal immunization trials as well as antenatal staff, church and community leaders residing in the study location. The snowballing method is useful for hard to reach population (Bonevski et al., 2014). Snowballing was used to recruit the partners of pregnant women, their mothers and some of the non-pregnant women. All the pregnant women were requested to inform their mothers and partners about the study. We recruited all partners and mothers that showed interest to participate in the study into separate focus group discussions. To obtain the sample of non-pregnant women, healthcare providers, community leaders and pregnant women were asked to inform other women that they knew about this study. SSIs were then conducted with all non-pregnant women (with and without children) that were willing and able to participate in the study. We recruited both males and females from the community of Soweto. The selection of both sexes was done to ensure that all potential influencers for women's decision making on maternal immunization are represented. However, the sample size and findings in this study are not representative of the entire Soweto population as only a subset of this community was sampled (Table 2). Nonetheless, the use of varying qualitative methods ranging from focus groups and in-depth interviews has allowed us to identify emerging themes and prevalent opinions pertaining to the knowledge, attitudes and acceptability of maternal immunization within an urban community such as Soweto. Table 2 below presents the demographic and socio-economic characteristics of the selected sample n = 55.

2.3. Data collection methods

Leveraging on our experiences in implementing Soweto Health and Demographic Surveillance System (HDSS), we secured community entry and had participants' mobilization through our Community Advisory Board (CAB) already established in the community. The CAB assisted to book appointment with church and community leaders and other categories of participants in the community. As shown in Table 2, there were 55 study participants in total. The questionnaires used for the different categories of participants are included as a supplementary file to this paper.

The interviews were conducted by a Social Scientist and a trained Research Assistant. Each individual interview lasted around 30 min while the FGDs were approximately 60 min in duration. The study participants differed in their ethnic background, level of education, employment status and age. Table 4 presents the distribution of participants by socio-demographic characteristics. Depending on the participant's literacy level, the interviews were conducted in either English and/or in local languages. These local languages included Sepedi, isiZulu, isiXhosa and Sesotho). Interviews were recorded with the use of tape recorders. Except those conducted in English, we first translated the interviews from local language to English and then transcribed them verbatim.

2.4. Ethical considerations

Ethical clearance was obtained from the Human Research Ethics Committee (Non-Medical) at the University of the Witwatersrand (H18/07/03). The research objectives were explained to all study participants. Signed consent forms and verbal consent for the tape recording were obtained before commencing the interviews and FGDs. Confidentiality was maintained by not allowing any of the interviews to be accessible to anyone outside of the research team.

2.5. Data Analysis

All interviews were translated into English. Thematic content analysis was conducted. The transcriptions were organized under thematic headings and later developed into an ethnographic summary with illustrative quotes. Table 3 below presents some of the themes observed.

3. Results

A total of 12 Key informant interviews (KIIs), 31 semi-structured interviews (SSI) and 2 focus group discussions (FGDs) were held among the study population. Each FGDs had six participants. A total of 45 women and 10 men were studied. Of this number, 12 participated in FGDs while 31 were SSI and 12 KII participants. The knowledge and attitudes towards maternal immunization were analysed across 5 thematic areas. This included knowledge of maternal immunisations, uptake of maternal immunization, beliefs/misconceptions, acceptability of maternal immunization and potential use of future maternal immunizations. The results are structured according to these thematic areas.

3.1. Socio-demographic characteristics of respondents and maternal immunization uptake

Table 4 presents the percent distribution of study participants according to their socio-demographic characteristics.

The results revealed that the younger (22–29 year olds & 30–39 year olds) participants were more accepting of maternal immunization compared to the 40 + year olds. The younger participants mentioned that many of their fears regarding maternal immunization were eased because they could use search engines on the internet such as Google to obtain further information if they were uncertain. However, two of the maternity unit managers mentioned that the challenges they received were of younger pregnant mothers visiting the clinic later in their pregnancy for antenatal care and, therefore, being too late to be administered vaccinations. HCPs further reported that, in most cases, pregnant women aged 30–39 years) were more accepting of vaccinations than younger pregnant women because the younger ones rarely visited the clinics for antenatal care. In the men's FGDs, the younger participants also mentioned that they lived in an era of "responsible fathers" and, thus, encouraging their partners to immunize fit well within this role. On the other hand, while the older (40 + years old) were open to maternal immunization, most expressed that access to information regarding it was still a problem. The majority of the study participants had matric (grade 12). These participants had better knowledge regarding maternal immunization compared to those that only had some secondary education. With regards to employment status, all participants mentioned that they felt they were at

Table 2. Study population and method of data collection.

Study Participant	Sample size	Data collection method
Pregnant mothers – prim gravida & multiple	6	SSI
Non-pregnant women with/without children	10	SSI
Women enrolled in maternal immunization trials and who previously had a child with Group B streptococcus (survived or died)	10	SSI
Husbands/partners of pregnant women	1 × 6 participants	FGD
Mothers of pregnant women	1 × 6 participants	FGD
Antenatal and maternity staff from community and tertiary hospitals	7	KII
Other maternity healthcare providers such as doulas, midwives, breastfeeding consultants	5	SSI
Community leaders	5	KII

Table 3. Thematic and content analysis: Findings from Soweto.

Thematic Heading	Description	Content
Knowledge of maternal immunisation	Pregnant women receiving immunization. Immunization of mothers. Giving mothers injections.	'It is to prevent diseases whilst the woman is still pregnant' – FGD, Mothers. 'It's all about preventing infections that can affect a baby' – pregnant mother. 'I think you are talking about the mother being immunized. Immunization refers to injections' – non-pregnant woman. 'Maternal is mother then immunisation is where by a mother like myself, she takes her child to the clinic to get their vaccines' - Doula. 'I think they take pills that prevent the baby from getting HIV if the mother is HIV positive. It's a pill of some sort' – pregnant mother.
Knowledge of types of maternal immunization	Tetanus/ATT or Pertussis or Flu vaccine	We give pregnant mothers tetanus when they first book at the clinic' – midwife. 'The flu vaccine is given once when they come to book, but obviously if the pregnant mother has got the signs of flu' – midwife. 'I don't know of any' – pregnant mother. 'According to my experience I haven't seen one, even when my wife was still getting children there was no immunisation that was given to her on behalf of the baby' – FGD, fathers. 'I did not receive any vaccinations during my pregnancy. But I know of the vaccination that prevents a baby from getting HIV' – mother, GBS positive.
Uptake & Use of maternal immunisation	Tetanus/ATT or Pertussis or Flu vaccine	'I received some injections during my pregnancies but I do not know what they were for' – pregnant woman. 'I was never vaccinated. They just did the normal procedure like HIV test, that's the only thing I can remember' – mother, GBS positive. 'I don't remember getting any vaccination during my pregnancy. I just remember that they took some blood from me to do some tests' – pregnant woman. 'During my pregnancy I received the flu vaccine. I don't remember receiving any other one – pregnant woman'. 'I received only one vaccination when I was pregnant. They told me that it was for my discharge or something like that. It was an injection' – non-pregnant woman. 'I was attending the Chiawelo clinic, I know they vaccinated us. The first injection they gave me, they said if my blood and the babies are not same group, it shouldn't affect the baby, something like that and they injected me with that' – non pregnant woman. 'I have been vaccinated before but I don't know the name of the vaccine' – pregnant woman.
Attitudes	Positive or pro immunization during pregnancy Negative or anti-immunization during pregnancy	'Pregnant women come to the clinic and just go with the flow of what the sister is saying' – midwife. ''The thing is sometimes when we are given vaccines we don't ask what we are being given. You find that they just administered' – pregnant woman. ''I remember the flu vaccine. I have never heard of tetanus. Truly speaking, I also did not ask the nurses anything when I was pregnant' – non pregnant woman.
Beliefs and misconceptions	Thoughts/perceptions about immunization Cultural perceptions Religious perceptions Myths	'I have never come across a case where women object immunization because of religious beliefs' –midwife. 'I didn't take the flu vaccine because two years ago my sister received the flu vaccine from Bara. She was fine during the pregnancy but after she delivered the baby she got such a strong and bad flu – pregnant mother'. 'Immunization is one of the ways the government uses to control people' – FGD, men 'In my Xhosa culture there are certain illnesses that they encourage us not to go to the clinic for. That instead we must use traditional medicine until I am fine – pregnant mother. 'They need to explain to me the importance because when a person is pregnant, she doesn't just take anything. Even if you get flu or you have a headache you don't drink any medication' – mother, GBS positive. 'My main fear is that what if the nurses do not vaccinate us for the correct thing. How do we know that they are vaccinating us for the correct thing? That makes me fearful' – pregnant mother.
Acceptability of maternal immunization	Intension to make use of vaccination Encouraging pregnant women to be immunized	'With my first pregnancy I was a bit more concerned about taking things while I am pregnant. I just feared that by taking things then my child would not be okay. I worried about the side effects of taking medication and what if they affected the baby' – pregnant mother. 'I encourage it because if you are not taking that injection to get that immunisation it means that you putting the baby on the risk because you won't know on the day you deliver what problems you will encounter and the baby will be affected' – Community leader. 'I think especially since we normally say prevention in better than cure, so for preventative methods so if there could be any viruses that the baby could pick up because the mother has not been immunised-Counsellor
Factors affecting future use immunizations	Socio-economic Socio-political	'I think the question of unemployment is a serious problem in our country' – Counsellor. 'Vaccination should always be free. If there was a cost, then as for the mom who goes to the clinic it would be a problem because some are unemployed or stay at home moms, some don't even have money and others are single' – Doula 'It comes back to cost because even if the vaccine is available and I do not have the money to get it then I will not be able to get it – pregnant mother.

a disadvantage if future maternal immunizations were to come at a cost because they would not afford to purchase them. The unemployed participants who had children and were pregnant noted that they were dependent on grant money. Even the unemployed participants expressed that they would be reluctant to pay for maternal immunization because they were used to the, already, free services provided at public clinics. Lastly, participants that had children were more open to maternal immunization compared to those that had no children. Those without children had the most fears regarding maternal immunization.

3.2. Knowledge and uptake of maternal immunization

We sought to understand whether participants had knowledge of maternal immunization. Overall, there was fair knowledge regarding

Table 4. Distribution of individual interview & FGD participants by select background characteristics.

Characteristics	Frequency (N)	Percent (%)
Age		
22–29	25	45.4
30–39	16	29.0
40 + years	14	25.4
Gender		
Female	49	89.0
Male	6	10.9
Level of education		
Some secondary	13	23.6
Completed secondary (Matric)	26	47.2
Tertiary	16	29.0
Employment status		
Unemployed	26	47.2
Employed	27	49.0
Self employed	2	3.6
Race		
Black	53	96.3
Coloured	2	3.6
Children ever born		
None	18	32.7
1–2	27	49.0
3+	10	18.1
N = 55		

maternal immunization particularly among women (pregnant and non-pregnant), with 4/6 pregnant women being able to explain the concept very well. The majority of the study participants broke the term down referring to "maternal" as having to do with women or mother and "immunization" being injections. All antenatal and maternity staff were able to fully explain that the term referred to vaccinations provided to pregnant women to prevent the child from infectious diseases. However, some women (2/6 pregnant; 4/10 non-pregnant) and community leaders (2/5) confused immunization with prevention of mother-to-child (PMTCT) of HIV. Knowledge of maternal immunization was poorest among partners/husbands and mothers of pregnant women. In both FGDs (mothers and partners, respectively), participants were able to partly explain the term maternal immunization. Their understanding was mainly that it was the "injections given to children", not necessarily pregnant women. All men in the FGD had no knowledge of the types of immunizations given to pregnant women or even to the "children".

The importance of maternal immunization was largely unknown among the study population because some of the pregnant women (3/6) and those not currently pregnant (5/10) who had at least one child reported that they were "injected" but were unaware of what the injections they received were meant for. The remaining 50% of the pregnant women said they were never given any vaccination. In the mother's focus group, only one respondent mentioned tetanus and that she remembered her daughter had received it. However, the types and importance of maternal immunization were unknown across all other study groups (men FGD and SIIs with community leaders). Our study found that only maternity or antenatal staff (7/7) were knowledgeable about the different types of maternal immunization.

All the sampled midwives in our study reported that pregnant mothers are given two vaccinations during pregnancy, namely, influenza and tetanus toxoid. However, only 1 of the 6 pregnant women interviewed and (3/10) non-pregnant women who had ever been pregnant confirmed receiving tetanus toxoid vaccine. At least 2/10 of women in maternal immunization trails and 4/10 non-pregnant reported not ever receiving the influenza vaccine. When asked if they knew their partners to have received any vaccination (tetanus or influenza), some men (2/6) reported that their wives/partners did not discuss the detail of medication they receive from the clinic with them while others (4/6) said their wives/partners had never reported receiving either of these vaccinations.

When prompted to understand reasons why uptake of maternal immunization was low, most of the women (5/6 pregnant; 7/10 non-pregnant) cited that they did not ask about immunization during antenatal visits because they trusted that their midwives were knowledgeable and experienced and would not provide them with any medication that would harm their babies. Three of seven of the antenatal staff interviewed confirmed that pregnant women attending antenatal classes/check-ups rarely asked about medications administered to them or vaccinations for that matter. Two of the antenatal unit managers stated that midwives educated pregnant women about different vaccinations during antenatal classes. However, of the pregnant women attending; or had once attended; antenatal classes at the community clinics, no mention was made about antenatal classes that included lessons on maternal immunization.

3.3. Beliefs and misconceptions regarding maternal immunization

After we provided an explanation of maternal immunization, the majority of study participants expressed some fear regarding immunization. The fears expressed by the studied participants were diverse. Among pregnant women; non-pregnant women who had never had a child and mothers of pregnant women, the commonly cited fear was the possibility that immunization would affect the health of the unborn child. However, most of them said that some of these fears were eased by the fact that immunizations were provided in a health facility and by professional nurses, who they believed were trained and would not in any way harm them. Some women in the FGDs went on to mention that they trusted immunizations from public health facilities as opposed to private health facilities because they have heard that some private doctors purchase their practice license and are not 'real doctors' but quacks that are authorised to provide vaccinations. Some men (3/6) in the FGDs had the perception that immunization was "a way used by the government to control people". These men expressed that the prescribed injections given to children from a young were done to ensure that children grow to always obey the law and the systems of the government. One man went on to mention that he knew of a couple that have never vaccinated their child but the child grew up to be healthy. This man largely questioned the need of vaccinations in general and gained the support of a few other men in the FGDs. Given these views, these men were reluctant for their pregnant partners to be immunized. Some of the participants had a negative attitude towards the influenza vaccine. The pregnant women (3/6), non-pregnant women (4/10) and mothers of the pregnant women (1/6) reported that they knew someone who had taken the flu vaccine but still later developed cold/flue or that they had experienced this themselves. This made them question the effectiveness of vaccinations and their usefulness in general.

3.4. Acceptability of maternal immunization

About 80% of all study participants were in support of maternal immunization once it was explained to them. We explained that maternal immunization is the vaccination given to pregnant women to protect both the mother and the foetus from morbidity and infection. We provided examples such as tetanus toxoid, influenza vaccine and also explained that new vaccinations to prevent Group B Streptococcus (GBS) and other infections were being developed. The participants that were keenest to accept future immunization programmes were the women who had experienced their child either die or become sick as a result of GBS. These women were enrolled in a GBS trial and had found out their baby's cause of death or illness through participation in the trial. Of the 10 women enrolled in maternal immunization trials and interviewed in this study, about 40% reported having a baby that died due to GBS while another 40% had a child that was infected with GBS but survived. Women who had experienced their child infected or die as a result of GBS

reported that their experience made them more cautious about taking vaccinations in their future pregnancies. The partners/husbands (2/6) of these women also expressed similar views. Community leaders, particularly the church leaders, said they encouraged women to adhere to advises and medications provided by health care professionals, including taking vaccinations were necessary. The mothers of pregnant women were accepting of maternal immunization said they continued to require reassurance from health care providers that these vaccinations were to the benefit of their children and grandchildren. Antenatal staff were also keen to hear more vaccinations are to be developed. They expressed that they required training on these diseases (GBS) and the benefits the vaccinations would provide thereof.

3.5. Factors affecting use of future immunizations

Most of the participants (80%) expressed that the only hindrance that may affect their use of vaccinations is if they come at a cost. They noted that all services currently provided at the public clinics were free and thus future vaccinations provided within these facilities should be made free as well. Another factor commonly raised was religion. Most study participants mentioned that some religions were against the use of vaccinations. However, when prompted to talk about their own religion, they expressed that theirs had no problem with maternal immunization. Two of the community leaders that were interviewed were pastors of local Christian churches. These participants expressed that they were in full support of maternal immunization. Only one of the six pregnant women interviewed and one of the mothers in the FGD who were Muslim mentioned that they were concerned about the ingredients used in medications and vaccinations because their religion was strict on the use of alcohol. These participants mentioned that they were cognizant about the amount of alcohol that went into medications including vaccinations and often enquired about this during consultations. However, both mentioned that the volume of alcohol included in vaccines was often limited and did not prevent them from getting immunized or immunizing their children. Within the men's FGDs, two of the participants mentioned that their culture required pregnant women to undergo and make use of specific traditional medication. However, they noted that this often does not interfere with immunization and can be done concurrently with maternal immunization. The antenatal staff said they had not experienced any challenges about patients who objected medications or vaccinations because of their cultural or religious beliefs.

4. Discussion

About 60% of participants in this study had some knowledge of maternal immunization. In addition, there was an overall positive attitude regarding maternal immunization among women, community and church leaders. The participants that reflected a positive attitude were either women who understood the benefit of maternal immunization to themselves, their unborn babies or children or individuals who because of their societal status as leaders, had the health interest of their constituencies at heart. Increasing acceptability of maternal immunization among the wider population requires educational interventions that address existing myths and fears and for health campaigns to market the immunization in a way that emphasises the intended benefit.

Previous studies that have established poor knowledge of maternal immunization in both low and middle income countries (Ahmed et al., 2001; Mayat et al., 2017). While the understanding of the term 'maternal immunization' did not occur intuitively to most of the participants in this study, the findings presented in this study show promising improvement in knowledge levels in so far as most participants being able to understand the terms "maternal" and "immunization" respectively and thereof generating an idea of the joint meaning. Studies have shown that mother's education is significantly associated with maternal immunization knowledge and uptake (Arsenault et al., 2017; Balogun et al., 2017; Chidiebere et al., 2014). We found that participants with completed secondary education (matric/grade 12) had better knowledge regarding maternal immunization compared to those with just some secondary education. However, if knowledge is assessed beyond the ability to interpret meaning, then the fairly high knowledge levels (60%) in this study remain inadequate as only few participants could provide example of maternal immunizations that they had received or knew about.

Several studies have shown that knowledge of maternal immunization is a key determinant of the uptake of maternal immunization (Eppes et al., 2013; Bushar et al., 2017). The average knowledge levels found in this study suggest a relatively low uptake of current maternal immunization programmes. The uptake of maternal immunization has been below national targets for most countries, globally. For example, the influenza vaccine uptake was 50% in the US, less than 65% in the UK and only about 2% in Hong Kong (Vojtek et al., 2018). Despite fair knowledge and a general positive attitude towards vaccinations, most pregnant women in this study had never been immunized while others, of those that have been immunized, did not know what they were vaccinated for.

Healthcare providers are a critical component in the transfer of information to patients regarding general health information including maternal immunization. However, challenges with staffing, limited resources and training stand as barriers to delivering comprehensive information during consultations. In this study, while all healthcare providers were knowledgeable of maternal immunization, its importance and the need to provide it, the findings in this study of patients not knowing the types of immunizations that are available and some reporting not ever being immunized suggest existing gaps in the current immunization programme; from both the healthcare system (affecting supply/administering of maternal immunization) and the education given to women around maternal immunization; that if not addressed, may affect the acceptability of future immunization programmes.

The success of future immunization programmes could further be hindered by several barriers including existing fears and misconceptions; misinformation and lack of adequate knowledge; religious beliefs and associated immunization costs.

The fears and misconceptions that continue to exist regarding immunization. For example, the present study found that some men believed that immunization was used to control people. The perception was that the government administered vaccinations to, especially, children from a young age in order to control their growth. This result is similar to findings from another study that found that rumours regarding immunization included that it was used as a means to control birth (Messeret et al., 2018). Research shows that 'paternal involvement and community rumours has an influence on the attitudes of women regarding immunization (Larson Williams et al., 2018). Given that husbands/partners in this study showed poor attitude towards maternal immunization, it is important to ensure that education programmes on maternal immunization extend to include men as well. Nudging partners and well as community members to understand the benefits of maternal immunization can be a good step to ensure that they encourage their partners and women about the importance of maternal immunization. Despite that research has found that fears of receiving vaccinations during pregnancy is no longer a barrier for maternal immunization as compared to a century ago (Greenwood, 2003; Munoz and Patricia 2013), our study revealed that fears such as the possible harm of immunization on the baby continue to exist among pregnant women and their mothers. However, the perceived benefit seemed to outweigh these fears as most of these women continued to show a positive attitude.

We found that antenatal and maternity staff have an important role to play in allaying existing fears around maternal immunization by providing adequate information regarding immunization to pregnant women and all other patients attending health facilities. This is mainly because women, including mothers, trust healthcare providers to provide them with information even in situations where the patient does not ask for this information. Similar to the finding in this study, other studies have found that pregnant women trust healthcare providers to provide information on immunization (Nganga et al., 2019). Overall, women and

community leaders are to the view that the medication they receive from their antenatal care providers will benefit pregnant women and their unborn children. However, it was unclear whether information on maternal immunization was included during antenatal classes or when the pregnant mothers were being vaccinated. The lack of a comprehensive introduction and explanation of maternal immunization, particularly, to pregnant mothers may prove to be problematic for current and future immunization programs because pregnant mothers may become reluctant to immunize or request to be vaccinated in the event that immunization is not offered.

There is diverse evidence on the effect of religion on immunization. Some studies that have found religion as a barrier to child immunization (Imdad et al., 2013; Pelčić et al., 2016). For example, in one of these studies, Muslim children had a greater chance of being under vaccinated (Pelčić et al., 2016). Overall we found that religious and traditional participants in this study remained intuitively positive about maternal immunization. While there were concerns expressed by Muslim participants about the amount of alcohol that goes into vaccinations, each acknowledged that the amount of alcohol used in immunizations was not a great deal to motivate or lead to non-use. In fact, one study went on to find that Muslims were more likely to support immunization than other religions (Kalok et al., 2020).

Finally, our study showed that cost was a major barrier that could affect uptake of future immunizations. The findings show an overall preference for vaccinations to be provided for free in order to ensure consistent use, especially for unemployed pregnant women or women that cannot always afford to pay for the immunization.

5. Conclusion

This study has shown that knowledge of maternal immunization among women (pregnant and non-pregnant), mothers and community leaders is fairly high and there is a general positive attitude towards maternal immunization in urban South Africa. To increase uptake of maternal immunization, antenatal and maternity staff, who are regarded as trusted source of information, need to be trained to provide adequate information regarding maternal immunization. Extending immunization information to everyone attending health facilities and not just pregnant women is crucially important as studies have shown that while men do not necessarily have an influence on the decision making regarding maternal immunization, pregnant women often seek advice from their mothers, peers or other family members (Willsam et al., 2019). Findings of this study established that when people have correct information and sufficient knowledge regarding maternal immunization, particularly from trusted sources, then this will allay most of the existing fears and misconceptions regarding immunization and could lead to increase in uptake of maternal immunization. Improved knowledge coupled with the already existing positive attitude towards maternal immunization may increase confidence in current maternal immunization programmes and the future ones.

5.1. Recommendations

Structured training on immunization should be provided for antenatal and maternity health care providers. Information on maternal immunization should be incorporated into antenatal classes and also put up in health facilities in the form of posters and information pamphlets for the attention of everyone visiting a health facility.

Declarations

Author contribution statement

N. Myburgh and S. Adedini: Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data.

C. Cutland: Conceived and designed the experiments.

M. Godongwana: Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

N. Radebe: Performed the experiments.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

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Original Research Article

A Cross-sectional study on the knowledge, attitude ,and practices of childhood immunization among mothers of under-five children attending a rural tertiary care center in South India

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Abstract

Background: Immunization is believed to save between 2 and 3 million lives each year. NFHS –4 survey shows that full immunization coverage in Andhra Pradesh is 59.8% in an urban area. The main reasons for inadequate coverage include inadequacy of information, education, and community participation in routine immunization. The study aimed to determine mothers' knowledge, attitude, and practice of childhood immunization.**Methods:** A cross-sectional study of 300 mothers of under-five children visiting the Pediatrics Out Patient Department during the period between August 2020 to November 2020 was done. The mothers were given a pretested questionnaire consisting of questions related to knowledge, attitude, and immunization practice. This study's data were subjected to standard statistical analysis using the SPSS ver.20 data processing software for windows seven. The p-value was considered significant for all tests if it was less than 0.05 at a confidence level of 95%.

Results: The primary resource of information about vaccination was from hospital/ health care workers (58%). Among 300 mothers, 28% of mothers were concerned about adverse reactions. The majority (89%) were utterly immunized, whereas 11% were partially immunized.11% of mothers postponed immunization.86% of mothers had good knowledge about the National immunization schedule. More than half of the studied sample, 162 (54%), were females and 138(46%) were males. The child's gender was not a significant factor in immunization status. There was a statistically significant between the education of the mother and immunization status. In this study, 74% belonged to the lower class and associated with immunization status was statistically significant.**Conclusion:** We conclude that maternal education, maternal attitude towards immunization, and the source of knowledge about immunization significantly reflected the state of vaccination. The improvement of maternal literacy and dissemination of information about vaccination will increase vaccine coverage in children.

Keywords: childhood immunization, knowledge, attitude, practices

Introduction

Background

One of the greatest discoveries in medicine is vaccination. One aspect of public health is considered the most cost-effective in lowering the prevalence of life-threatening and contagious diseases [1]. Immunization is believed to save between 3 million lives every year[2].The concept of immunization is not bounded to a single person. Still, it concerns the community as a whole: a vaccinated child is protecting himself and others by preventing the transmission of vaccine-preventable diseases (V.P.D.). This is known as herd immunity[3].A decrease in multiple V.P.D. has been noticed for various years, increasing the number of unvaccinated children reported recently over 1.5 million children died from V.P.D. in 2017[4]. As per the World Health Organization (WHO), almost 20 million children were not vaccinated against " diphtheria,measles and tetanus" in 2018[5].The historical success of eradicating the dreaded disease, Smallpox, prompted World Health Organization (WHO) to ask its member countries to launch immunization against six vaccine-preventable diseases in its national immunization schedule. In India, EPI was established in 1978, and it was re-designated as the Universal Immunization Programme (U.I.P.) in 1985 to cover at least 85% of infants[6].The National Family Health Survey (NFHS) had a marginal improvement in India's vaccination coverage over the years. NFHS-1 conducted in 1992-93 reported a vaccination coverage of 35.4%, which rose to 42% in NFHS-2 undertaken in 1998-99. The NFHS-3 launched in 2005-06 reported vaccination coverage of 43.5% [7-9].The UNICEF coverage evaluation survey for the year 2009 showed that the immunization coverage had improved to 61%. Nevertheless, these figures are way short of the target of 85% coverage. NFHS – 4 survey shows that full immunization coverage in Andhra Pradesh is 59.8% in urban area[10].WHO defines vaccine hesitancy is the refusal or delay in vaccination. This behavior's primary reason is the doubts about the vaccines' safety, fueled by bad experiences or by media[11]. The easy access to the internet has helped anti-vaccination campaigns reach more people and has facilitated misinformation. One reason for hesitancy is the infrequent observance of the adverse outcomes of V.P.D., as they have become relatively rare. Because of this, many parents believe that vaccines are unnecessary and that the harm more than the benefits[12].The main reasons for poor coverage include community participation in routine immunization, information education, and communication activities.Negative parental perceptions of vaccinations are also an essential barrier to childhood vaccination. It is important to understand the variables that influence parental decisions regarding their child's vaccination and plan measures to overcome these

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barriers. Regarding vaccination practices, so many factors contribute to the decision-making process. First of all, several studies have shown that unvaccinated children had older mothers with lower levels of education. Studies concluded that more educated mothers tended to vaccinate their children more. Moreover, it has been proven in many studies that living with people who support immunization and vaccinate their children resulted in positive attitudes towards vaccination.The cost of the vaccines seems to be one of the determinants of the immunization status. Second, the trust in the health-care system and the relationship with the pediatrician or physician are important determinants of the attitudes towards vaccines. The more trust the parents have in the several health institutions, the more knowledge they acquire about the benefits and risks of vaccines. The relationship between the parent and physician has shifted through the years and has become based on communication and shared decisions. Many parents find themselves lacking knowledge about the concept of vaccination and start looking elsewhere when there is poor communication with the pediatrician, often stumbling upon myths and false information.Furthermore, the level of knowledge of parents is an essential determinant of their practices. Knowledge directly affects attitude, thus, working on educating parents should be a basis for acquiring better attitudes and practices. Many talked about the association between the lack of immunization and the lack of knowledge regarding vaccine necessity. Conversely, others talked about how parents who have less knowledge about immunization were more compliant. This was explained by the fact that parents who acquired knowledge about vaccines also questioned their safety and necessity. The mother plays a significant role in promoting the health of children. Several misconceptions, ignorance, and inadequacy of knowledge about the vaccine are prevalent among mothers, especially under-five children. It is important to understand the variables that influence parental decisions to vaccinate their children and plan measures to overcome these barriers.Despite the efforts put into raising the rate of vaccinated children, Indians are still far from reaching the worldwide -recommended rates. The study aimed to determine mothers' knowledge, attitude, and practice with under-five children about immunization.

Aims and Objectives

1.To study the knowledge,attitude and practices of immunization among mothers of under-5 children

2.To correlate the knowledge, attitude, and practices of immunization with the immunization status of under-5 children

Methods and Materials

A cross-sectional study of 300 mothers of under-five children was included in the study from August 2020 to October 2020 over four months at O.P.D., department of pediatrics,PESIMSR,Kuppam.

Selection criteria: Mothers whoever attending the immunization clinic at The Department of pediatrics,PESIMSR, Kuppam.

Inclusion Criteria:1.Mothers with under-five children and attending the Outpatient Department, Department of Pediatrics, PESIMSR, Kuppam.

Exclusion Criteria: Mothers whoever not willing to participate in the present study. The interview consisted of questions about knowledge, attitude, and practice of immunization and the child and mothers' background characteristics. It consists of two parts: the first part dealt with the socio-demographic characteristics of the parents: sex, marital status, age, level of education, mother's occupation, monthly income, number of children, family size, and type of house. The second part assessed parent's level of knowledge about vaccination, how they acquire their information, neighbors and the pediatrician, pharmacist, friends, social networks, family doctor, and public health ministry in decision making. The Immunization history was entered into immunization data for analysis. The results were categorized into two groups. Group-1 was immunized entirely up to the presenting age, and Group 2 was partially immunized, defined as those who missed anyone vaccine out of the National Immunization Programme.Details of about the vaccine administration was obtained from the immunization card. In case of unavailability of the card data obtained based on recall by the respondents, Variables analyzed were:Respect to the studied mothers:Education, source of information about vaccination, causes of cessation of immunization, the impact of education, and mother's work.

Statistical analysis*:* This study's data were subjected to standard statistical analysis using the SPSS version.20 data processing software for windows seven. The p-value was considered significant for all tests if it was less than 0.05 at a confidence level of 95%. A Chi-square test was used for statistical analysis.

Results

Following the inclusion criteria, 300 participant mothers were interviewed in our study. Of those, 89% (n=267) was completely immunized whereas 11% (n=33) was partially immunized (Table 1). The most often reason for incomplete immunization was child sickness, reported in 55%, followed by social reasons, forgetfulness, and others. More than half of the studied sample, 162 (54%), were females and 138(46%) were males. The child's gender was not a significant factor in immunization status, as our study showed (Table 2).In our study, the average of children with age is nine months. Out of 300 mothers, 11% (n=33) were illiterate, 24%(n =72)were completed primary education, 30%(n=90) were completed secondary education and intermediate, 21%(n=63) were completed graduation, 14% (n=42)were postgraduates. It was statistically significant (p-value <0.005) between the education of the mother and the child's immunization status (Table-3). Out of 300 mothers, 69% (n=207) were housewives, and 31% (n=93) worked women. There was no significant association between mother's occupations on child's immunization status. Out of 300 father's 8 % (n=24) were illiterate, 28%(n =84)were completed primary education, 28%(n=84) were completed secondary education and intermediate, 16%(n=48) were completed graduation, 20% (n=60)were postgraduates. There was no statistically significant (p-value >0.005) between the father's education and the child's immunization status. In the present study, Out of 300 participant mothers,20% (n=60) belonged to the middle class,74%(n=222) belonged to the lower class, and 6%(n=18) belonged to the upper class.There was an relation between socio-economic status and immunization status as statistically significant (p-value <0.05). Overcrowding in the family was present in 25% (n=75) of the study population.Among the study group, only 32% (n=96) of mothers searched about immunization. The primary resource of information about vaccination was 11% (n=33) of mothers from Newspaper, 58% (n=174) of mothers from hospital/ health care workers, 24% (n=72) of mothers from Asha-workers/ community worker,(2% n=6)of mothers from neighbors, and 5% (n=15) from the religious leader (Table -4, figure -1).Among 300 mothers,74%(n= 222) of mothers trust a family doctor or pediatrician who provides all vaccination information. There was an association between trust in the family doctor and immunization status as statistically significant (p-value <0.05). Out of 300 mothers, the main impact in decision making regarding vaccination was 28% (n=84)of mothers by husband, 22%(n=66) of mothers by in-laws, 19% (n=57) of mothers by the doctor, 27% (n=81) religious leader, 4% (n=12) of mothers by media. Among 300 mothers, 8 %(n=24) of others rejected, 11% (n=33) of mothers postponed immunization. Out of 300 mothers, 86% (n=258) of mothers had good knowledge about the National Immunization schedule. There was a statistical significance (p-value less than 0.05)between knowledge about the National immunization schedule and immunization status.Among 300 mothers, 28% of mothers were afraid of adverse reactions. 88% of mothers fear fever, 34% of mothers fear excessive cry,4% of mothers were afraid of convulsions, and 18% were afraid of loose stools, 22% of mothers fear injection site abscess.

Table 1: Frequency and percentage of immunization status

Immunization Status	Frequency	Percentage
Completely immunized	267	89%
Partial immunized	33	11%

Table 2 Association between sex and immunization status

Sex	Completely immunized	Partial immunized	P-value
Female	144	18	0.969
Male	123	15	(Chi-square -0.0015)

Table 3 Association between mothers education and immunization status

Mother's education	Completely immunized	Partial immunized	P-value
Illiterate	18	15	0.002711 (Chi-square -16.2)
Primary education	63	9	
Secondary education & intermediate	87	3	
Graduation	60	3	
Post Graduation	39	3	

Table 4 Resource of information regarding immunization

Resource of information	Frequency	Percentage
News paper	33	11%
Hospital / health care worker/ doctor	174	58%
Asha worker	72	24%
Neighbors	6	2%
Religious leaders	15	5%

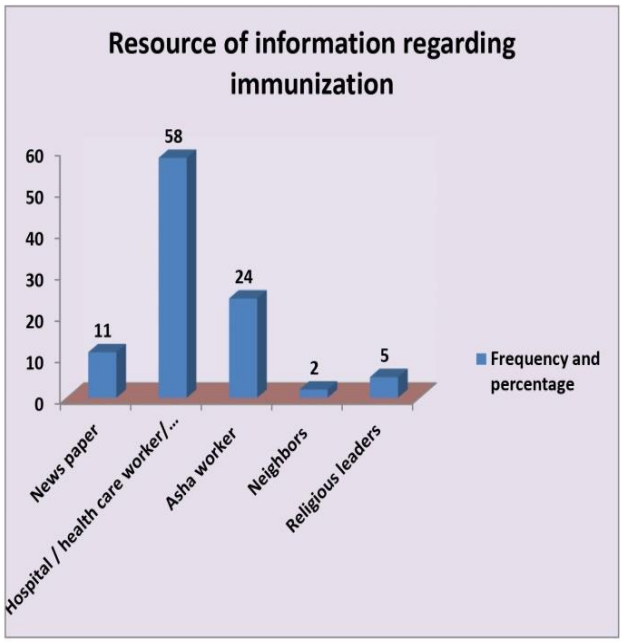

Fig 1: Resource of information regarding immunization

Discussion

Vaccination in India is an obligatory program and maintained adequately through a universal protocol. Despite all efforts and initiatives are taken by the Government, international agencies, and helping hand through various non-governmental organizations, incomplete immunization of the children observed in our study. Child sickness was the main reason behind the cessation of vaccination in our study, followed by social inhibitions, forgetfulness, and non-availability of vaccines during their stipulated immunization date.These reasons were similar to other studies such as Impicciatore et al. in Italy in 2000[13].Similar findings were reported from developed[14]and developing countries[15].There was a statistically significant association between maternal education and immunization status (p= <0.0001). This might be because being more educated allows better communication with health care providers and fewer chances of acquiring wrong beliefs regarding vaccines. Singh et al. had reported in their study that mothers had adequate knowledge regarding the need for immunization but had insufficient knowledge regarding VPDs[16].In a study by Kapoor et al., it was found that awareness and knowledge about V.P.D.s increase with mothers' education status[17]. In our study, completely immunized children were 82.25%, and maternal literacy was 91.25%. The gap between these was relatively higher than the study carried out by Odusanya et al. in Nigeria in 2008[18],where maternal literacy and complete immunization rate were 83% and 81%, respectively. Maternal education was a significant predictor of immunization completeness as the highly educated mothers will be more aware of this issue's seriousness. Several researchers have shown this role of maternal knowledge as an essential determinant of vaccination coverage. Hence if steps were taken to ensure good education to the girl child and knowledge about vaccination integrated into the antenatal care of mothers, the vaccination coverage would be near complete and the goals of eradicating diseases. The lower than expected coverage observed in our study reinforces the need for continuous motivation, regular supervision, continuous monitoring, and evaluation to detect any declines in vaccination. There was no statistically significant association between gender and immunization status (p= >0.05),and this is almost the same with the study carried out by Odusanya et al. in Nigeria in 2008[18].In a cross-sectional study conducted by Siddiqui et al.In Karachi, significantly better vaccination status was found among children with both parents literate than children with both parents illiterate[19].Educated parents seem to understand more the risks of infectious diseases and the benefits of vaccination in their prevention.There was a strong statistically significant association between socioeconomic status and immunization status (p= <0.05).This might be because parents with a high income have the means to treat their children and live near health facilities. Some may also think that they can protect their children through healthier lifestyles and less exposure . other studies also noticed that low socio-economical sta income can be associated with a negative attitude since some parents with low income choose to spend money on other necessities.There was a strong statistically significant association between the source of immunization and immunization status (p= <0.05). More than half of the attendants of immunized children received the information from health care workers/doctors.This was because most of the respondents had available services at primary and secondary health care levels. These health facilities seem to be most reaavailable and accessible to the people. Our study revealed that doctors /health care workers were the primary source of information. This was in concordance with the study by Bholanath et al[20].Healthcare providers play an essential role in shaping the opinion of parents and their vaccination practices. When dealing with parents, the pediatrician or other physician should properly communicate the importance of vaccines, their safety, and the consequences of noncompliance with the schedules. The interaction between healthcare workers and caregivers is decisive to ensure the completion of the vaccination schedule.Effective communication is particularly needed to achieve vaccination coverage in hard-to-reach populations and to build trust in vaccines among those who question them. Different types of media (e.g., television and radio and social)) in immunization campaigns and collaboration with influential community leaders can positively increase immunization coverage in both rural and urban areas.Mobile phone access has been increasing dramatically even in rural areas of developing counties like India, over the past decade. Mobile phone-based interventions for improving vaccination coverage in populations at risk for under-vaccination are quickly becoming more efficacious. The negative attitude such as fear of vaccination and some false beliefs played a significant role in the partial immunized group. This finding is under other studies such as Nisar et al. in Pakistan in 2010 and Saunders et al. in Combodia in 2005 [21,22]. Parents would delay vaccinating their children in the circumstances of simple childhood illnesses. These myths must be abolished, and mothers must be assured regarding the safety of vaccines.Regarding vaccination practices, many factors contribute to the decision-making process. First of all, multiple studies have shown that unvaccinated children were mostly white, had older mothers with higher levels of education, and were of families of increased income. Many parents find themselves lacking knowledge about the concept of vaccination and start looking elsewhere when there is poor communication with the pediatrician, often stumbling upon myths and false information Furthermore, the level of knowledge of parents is an essential determinant of their practices. Knowledge directly affects attitude; thus, educating parents should be a basis for better attitudes and practices.In addition, another factor related to immunization practices is the parental attitude towards vaccines. Studies have shown that mothers who had negative attitudes towards vaccination didn't vaccinate their children and didn't attempt to learn about immunization. Smith et al. clearly demonstrated that parents whose children were vaccinated listed their pediatrician as a strong influence on their decision to vaccinate. With all the challenges acknowledged, the single most crucial factor in getting parents to accept vaccines remains the one-on-one contact with an informed, caring, and concerned pediatrician. A well-informed pediatrician who effectively addresses parental concerns and strongly supports the benefits of vaccination has an enormous influence on parental vaccine acceptance[26].Most of the mothers did not have sufficient knowledge about vaccination related to low immunization status in Khana. This study also mentioned that nearly half of the children did not complete their immunization schedule because of routine vaccines in the health facilities. The Government's long-term and advanced commitment to vaccine manufacturers to purchase vaccines and engage communities in dialogue over the benefits of immunization is advocated to improve immunization [27].The government health facilities need to be more user-friendly by making it accessible to all and reducing the waiting time and coordination between all tires of health facilities so that the health system becomes efficient for the achievement of the goal of "Health to All".Being a cross-sectional study, our research faces some limitations. A non-differential bias could have occurred since parents may under or overestimate a question. A selection bias might be possible because of the refusal rate and since no comparison could be made between parents who refused and those who accepted to enroll in this study. Another limitation is the possibility of occurrence of a recall bias, especially in parents who did not have vaccination cards.

Conclusion

We conclude that maternal education,maternal attitude towards immunization,and the source of knowledge about immunization significantly reflected the state of vaccination. Biased information, false beliefs, and little knowledge about immunization make things challenging to make ultimately successful. It also calls attention to the need to guide parents, especially those with lower levels of education, on the importance of vaccination. It is crucial to identify new strategies to highlight the need for immunization and educate

parents about the importance of vaccines on an individual and public health level. Appropriate information dissemination, aggressive campaigning, the involvement of health care workers, and collaborative group work are crucial to making it a universally successful program. That appropriate actions are being taken to better parental guidance.

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Knowledge, Attitude and Practice of Mothers toward Children's Vaccination at Alfatih One in Sudan

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Abstract

The aim of this study was to assess knowledge, attitudes and practice of mothers towards children's vaccination. **Background:** Vaccine preventable diseases (VPD) are considered one of the main causes of sicknesses and deaths among children all over the world. Parents' knowledge and attitude towards immunization are likely to influence uptake. Vaccination is one of the most cost-effective public health tools to prevent infectious diseases. This study assessed knowledge, attitudes and practice of mothers towards children's vaccination. **Design:** Cross-sectional study was conducted from April 1st to May 1st in 2016 among mothers whose children under five years which was carried out at their home in Alfatih one. The sampling method used was simple random sampling. The first house was selected randomly according to availability of household list. Total number of mothers under study were 210 selected randomly from 400 mothers' home. Structured interviewing sheets were used to assess sociodemographic data, knowledge, attitude and practice of mothers toward vaccination. The data were analyzed using SPSS (Stand for statistical product and service solutions) version 20. **Results:** It's revealed that the correlation between knowledge and practice of the studied mothers was statistically insignificant. **Conclusion:** More than two third of studied mothers had poor knowledge, while on other hand their practice was good towards vaccination.

Keywords

Attitude, Vaccination, Knowledge, Mothers, Practice

1. Introduction and Background

Immunization is the process whereby a person is made immune or resistant to

an infectious disease, typically by the administration of a vaccine. These vaccines help to stimulate the body's own immune system to protect the person against subsequent infection or disease, therefore it depicts the ability to develop immunity [1]. Immunization is one of the most successful and cost-effective public health interventions in the constant effort of human beings against diseases that affect our wellbeing. Immunization has prevented more deaths in the past years than any other health intervention globally [2]. Kapoor and Vyas had stated that although immunization is one of the most effective, safest and efficient Public Health Interventions, and that its impact on childhood morbidity and mortality has been great its full potential was yet to be reached [3]. The Childhood immunization almost guarantees protection from many major diseases. It prevents millions of deaths per year worldwide and is widely considered to be "overwhelmingly good" by the scientific community [4]. However, 2.5 million deaths a year continue to be caused by vaccine preventable diseases, mainly in Africa and Asia among children less than 5 years old [4]. Therefore, an urgent need to find ways to increase vaccination coverage and particularly to encourage parents to have their children vaccinated [5]. Although global vaccination coverage is holding steady but estimated 22 million infants worldwide are still missing out on basic vaccines [1]. World Health Organization reported that 115 million infants worldwide received Diphtheria-Tetanus and Pertussis vaccine. In addition, there is about 85% of the world's children received one dose of measles vaccine, and received polio vaccine however, remain the polioendemic in two countries (Afghanistan & Pakistan) [6]. In Sudan, WHO and UNICEF estimate national immunization coverage about 99% and it represents a very high percent since 2005 [7]. On the other hand, immunization prevents an estimated two to three million deaths each year from Diphtheria, Tetanus, Pertussis (whooping cough), and Measles [8]. This study aimed to assess knowledge, attitude and practice of mothers toward children's vaccination under five years, and to assess the relation between demographic data and knowledge, attitudes and practice.

2. Material and Methods

Cross-sectional study was conducted from April 1st to May 1st in 2016 among mother whose children under five years which was carried out at their home in ALFATIH ONE. The first house visited and selected randomly according to availability of household list. Total number of mothers sample was 210 selected randomly from 400 mothers' home. Interviews were done for participating mothers in the study and respect the refusal for some mothers. The interview questionnaires consist of demographic characteristics of mothers and children. The questionnaire includes age, education level, occupation, number of children under five years, sex of children. Knowledge was tested with 18 questions which required true or false answers relating to important of vaccination, diseases controlled by vaccination, contraindication, immunization types, the routes of vaccine administration. Every Correct answer scored = (1), while an incorrect

an-swer scored = (0). The respondents were divided into fair, poor and good groups evaluated as follows: poor less than 50% while fair = 50% - 65% and Good = more than 65%. Attitude likert scale of vaccination consists of 15 statements with 3 point scale (agree), (uncertain) and (disagree). The main categories of the attitude scale include importance of vaccination for children and its safety, side effects of vaccination and it must give according to schedule its effectiveness in prevention of communicable disease. Every mother was instructed to choose one of the three possible responses for each statement. Scoring system: scoring was as; agree = 2, uncertain = 1 and disagree = 0 for the positive attitudes (10 statements), while agree = 0, uncertain = 1 and disagree = 2 for the negative attitudes (5 statements). The total score of attitude ranged from 0 - 32. The attitude score was evaluated as; Poor = less than 50%, Fair = 50% - 65% and Good = more than 65%. Practice tool composed of 14 questions. One mark was awarded for each correct answer, the total score of the practice ranged from 0 to 14. The practice score was evaluated as follows; Poor = less than 50%, Fair = 50% - 65% score and Good = more than 65% Attitude likert scale of children's vaccination.

Statistical analysis: SPSS software package (Stand for statistical product and service solutions version 20) was used for data analysis. Descriptive statistics including frequency, distribution, mean, and standard deviation were used to describe different characteristics. Chi-Square test was used to test the significance of the results. Pearson correlation was conducted to show correlations between knowledge, attitude and practice scores among the studied mothers. P-value of less than 0.05 was considered as denoting statistical significance.

3. Results

Table 1 represents that the studied mothers aged less than 20 (30) to less than 30 (3), 30 - 40 years (103) and more than 40 (74) with percent 14.3%, 1.4%, 49.0%, 35.2% respectively Concerning mothers, occupation the same table revealed that 138 (65.7%) of the studied mothers were housewives and minor of them 10 (4.8%) were nurses, 143 (68.1%) of them married and 59 (28.1%) divorced, and 8 (3.8%) widowed regarding to their level of education, the table shows that 80 (38.1%) of the studied mothers were illiterate while 20 (9.5%) same percent show their education level was primary and secondary although 60 (28.6%) have a higher education.

Table 2 shows that 87 (41.4%) of the studied mothers had poor knowledge score while 78 (37.1%) had good knowledge score, and 45 (21.4%) their knowledge were fair.

Table 3 shows that 110 (52.3%) of the studied mothers had good attitudes score while 100 (47.6%) had poor attitudes score, their attitudes score range between good and poor, no fair score.

Table 4 shows that 22 (10.5%) of the studied mothers had poor practice score while 188 (89.5%) had good practice score, their practice score range between

Table 1. Demographic data (n = 210).

Variable	Frequency	%
Age		
Less than 20 years	30	14.5
20 - 29	3	1.4
30 - 40	103	49.1
Above 40	74	35.2
Occupation		
house wife	135	65.7
Teacher	12	5.7
Nurse	10	4.8
Employer	50	23.8
Education		
Illiterate	80	38.1
Primary	20	9.5
Intermediate	30	14.3
Secondary	20	9.5
higher education	60	28.6
Marital status		
Married	143	68.1
Divorced	59	28.1
Widowed	8	38.1

Table 2. Distribution of the studied mothers according to their general knowledge about vaccination and knowledge scores of the study participants (n = 210).

Characteristics	N	%
Importance of vaccination can Prevent infectious diseases	153	72.9
Maintain Child health	49	23.3
Reduce child mortality rate	139	66.2
Protect children from complication	166	79.0
Diseases controlled by obligatory vaccination Measles	137	65.2
Tuberculosis	153	72.9
Poliomyelitis	178	84.8
Diphtheria, Tetanus and Pertussis diseases	137	65.2
Hepatitis B virus	14	25.2
Contraindication		
Malnutrition	137	65.2
Diarrhea	53	25.2
Minimal Infection	158	75.2
Immunological diseases	44	21.0
The routes of vaccine administration		
Polio	188	
BCG (Bacillus-Calmette-Guerin)	160	
DPT (Diphtheria, Tetanus and Pertussis)	21	
HBV (Hepatitis B)	65	
MMR (Measles, Mumps and Rubella)	52	
Knowledge score		
Poor (<50%)	87	41.4%
Faire (50% - 65%)	45	21.4
Good (>65%)	78	37.2

Table 3. Distribution of the studied mothers according to their attitudes about vaccination and attitudes scores of the study participants (n = 210).

Characteristics	agree		Uncertain		disagree	
	N	%	N	%	N	%
Positive attitude Vaccination is important	122	58.1	66	31.1	22	10.4
Vaccination is safe	111	52.9	62	29.5	37	17.6
vaccination maintain child health	111	52.9	62	29.5	37	17.6
vaccination is the best for each infant	111	52.9	62	29.5	37	17.6
recommend others to vaccinate their children	111	52.9	62	29/5	37	17.6
Vaccination must give according to schedule	111	52.9	62	29/5	37	17.6
Vaccination save the community	117	55.7	90	42.5	3	1.4
Effective in prevention of infectious diseases	189	90.9	17	6.1	4	1.9
Vaccination reduce mortality rate	117	57.1	90	42.5	3	1.4
Tetanus vaccine important for infant and mothers health	117	57.1	90	42.5	3	1.4
Negative attitude Vaccines have severe side effects	142	67.6	68	32.4	0	0
Infant Infected with the disease which immunized against	132	62.3	68	32.4	10	4.8
Side effects cause death	142	67.6	68	32.4	70	33.3
Vaccination important for boy than girls	72	34.3	68	32.4	10	4.8
vaccination is harmful	210	100	0	0	0	0
attitudes score		N			%	
Poor (<50%)		100			47.6	
Faire (50% - 65%)		0			0	
Good (>65%)		110			52.3	

good and poor, no fair score. Table 5 shows the associations between mothers, knowledge score and demographic data which reveals that 33 (73.3%) of educated mothers with higher education and 8 (17.7%) mothers with intermediate education had a good knowledge at $p < 0.00001$. Table 6 shows that there were positive statistically significant correlations between mothers age and knowledge but it was a negative between age, attitude.

4. Discussion

Immunization is an important public health interventions strategy to reduce the morbidity and mortality associated with infectious diseases. Immunization has saved the lives of more children than any other medical intervention in the last 50 years. Vaccines are safe, simple and one of the most cost-effective ways to

Table 4. Distribution of the studied mothers according to their practice about vaccination and practice scores of the study participants (n = 210).

Characteristics	Yes		no	
	N	%	N	%
Your infant received vaccines according to Ministry of health schedule	90	42.9	120	57.1
Reported vaccinations side effects	51	24.3	159	757
High temperature	22	10.5	188	89.5
Rash	22	10.5	188	89.5
Diarrhea	22	10.5	188	89.5
Pain	22	10.5	188	89.5
Received anti-pyretic at vaccination day only	51	24.3	159	757
Received anti-pyretic after vaccination	51	24.3	159	757
Swelling of the infant feet	22	10.5	188	89.5
Management of swelling Cold compress	22	10.5	188	89.5
Starch	51	24.3	159	757
Analgesic and local anti inflammatory	22	10.5	188	89.5
Report doctor	22	10.5	188	89.5
Practice score	N		%	
Poor (<50%)	22		10.5	
Fair (50% - 65%)	0		0	
Good (>65%)	188		89.5	

Table 5. Associations between mothers, knowledge score and demographic data no (210).

Items	Knowledge						X^2	P
Socio-demographic data	Poor (n = 87)		Fair (n = 45)		Good (n = 78)			
	No	%	No	%	No	%		
Occupation								
Employed	12	13.8	30	55.6	60	77	78.826	0.00001*
Not employed	60	69	15	34.9	18	23		
Education								
Illiterate	24	27.5	21	47	28	35.9	24.375	0.00001*
Primary	21	24.1	2	4.4	3	6.6		
Intermediate	12	13.7	2	4.4	8	17.7		
Secondary	2	2.2	10	22.2	6	13.3		
higher education	22	25.2	10	22.2	33	73.3		

X^2: Chi square test. Statistically significant at: *$p \leq 0.00001$.

Table 6. Correlation between mothers' age, knowledge, and attitude and practice score.

Items	Mothers, age	
	Rs	P-value
Knowledge	0.052	0.022
Attitude	−043	0.030
Practice	0.045	0.136

Rs: Pearson coefficient. Statistically significant at $p \leq 0.05$.

save and improve the lives of children worldwide [8]. Each year, two to three million lives are saved through immunization. However, more than 22 million children still go without basic immunization that leaving them susceptible to life threatening illness and permanent disability. Immunizing children against vaccine-preventable diseases is an important factor in saving lives, increasing productivity, and alleviating poverty [9]. The present study has tried to identify the Knowledge Attitude and Practice of mothers about vaccination of their children in Alfatih one in Sudan. In this study, results reveal that near to half of the studied mothers had poor knowledge Score 87 (41.4%) related to children, vaccination and 110 (52.3%), more than half of mothers had good attitude score and two third 188 (89.5%) reveal good practice towards vaccination. The results of the current study which reflect poor knowledge of mothers may be due to the low level of awareness about important of vaccination in spite of most of them were educated, lack of educational program in rural areas (Alfatih one), and their positive attitude toward vaccination may be due to the mandatory vaccination require for school registration. These findings were in agreement with; study done at Mawatch Goth, Kemari town Karachi [10], which revealed inadequate knowledge, strong positive attitude and practice of mothers. The results of this study came at contrast with knowledge score of study done in a Rural Area of North Kashmir India to assess mothers' knowledge, attitude and practice about immunization of children which showed good knowledge, good practice and good attitude of the studied mothers [11]. The same study was done in a traditional city in the United Arab Emirates which came in contrast with this study [12]. Other study done in Kosofe local Government area of Lagos state, Nigeria [13] reported that good knowledge, positive attitude and good practice of mothers towards childhood immunizations, However, Iraqi study results about parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance revealed two third of parents' have adequate knowledge-practice scores which wasn't in the same line with this study [14]. Another study done in southwest Nigeria to assess knowledge and perceptions of adult males towards childhood immunizations revealed good knowledge and good perceptions [15]. Regarding association between education and knowledge score, in this study there is a significant relation between knowledge score and their level of education. It was statistically significant, $p = 0.00001$, this finding was in agreement with the study done in Taif region, Saudi Arabia which studied

knowledge and attitudes on childhood vaccination, a survey among Saudi parents p = −0.00001 [16]. And also the study done in southwest Nigeria which founded statistically significant association between respondents' level of education and their willingness to support childhood immunization [15]. However came in contrast a study done in at Damietta Governorate which found good significant relation with knowledge score and the intermediate education level of mothers [17]. Lack of education, can lead to reduced ability to find, understand and use health information. Thus education is an important determinant of health status in developing world; well educated mothers had better health knowledge than the poorly educated. Furthermore, education may change mothers' knowledge and perception of the importance of modern medicine in the care of their children. Regarding correlations between mothers' age and knowledge, practice score in the current study the difference between mother's knowledge, attitude and age was significant. These findings are in the same line with the results done at Damietta Governorate which found a significant relation between knowledge and mother age [17]. Other study in peri-urban Karachi to assess mothers' knowledge about EPI and its relation with age-appropriate vaccination of infants which revealed a statistically significant association with age appropriate vaccine coverage which agreed with this study [18]. This correlation between age and knowledge could be justified as the knowledge level differs from younger than older, young mothers may be are interested in reading books than older mothers. Conclusion & recommendations are depended on the findings of the present study, it could be concluded that comparing to their attitudes which represent nearly half of mothers had poor knowledge more than two third, on the other hand, their practice was good towards vaccination. There were positive statistically significant correlations between mother's age and practice and the correlation between mothers, attitude and age was a negative one. Recommendation of Health education program about vaccination for mothers are needed especially for those in rural areas through TV or radio or any mass media. Encourage meetings between mothers with children in the same age to exchange information at maternal and child. Provide mothers with vaccination booklets will explain all information about vaccination.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Lampiran 3

LEMBAR KONSULTASI

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
		ACC judul.	
	26 - 11 - 2020	Bab I: Revisi . Intro desk di sesuai kan dg Variabel yg diteliti . Tujuan penelitian	
	18 - 12 - 2020	bab II Revisi - kerangka konsep	
	28 - 12 - 2020	Bab II : ACC. di lanjutkan Bab III	
	7 Januari 21	Bab III: Revisi	
	18 Januari 21	Bab III Revisi Lanjut Bab IV	

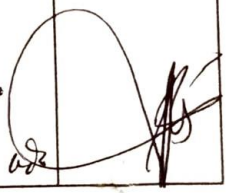
NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
	25 - januari 2021	Bab III : ACC. Bab IV : Revisi pada Defini operasional & lihat lagi penulisannya	
	29 januari 2021	Bab IV · ACC. Lanjut Bab V. Konsul keseluruhan	
	5 - 1 - 2021	Bab IV & Bab V · ACC Siap ke ujian proposal	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
	25 - Januari 2021	Bab III : ACC. Bab IV : Revisi pada Defini operasional & Lokasi penelitiannya	
	29 Januari 2021	Bab IV · ACC. Lanjut Bab V. Konsul keseluruhan	
	5 - 1 - 2021	Bab IV & Bab V · ACC Siap ujian proposal	
	31 - 8 - 2021	Segera ambil penelitian Studi Literaturnya	
	6 - 9 - 2021	Revisi Abstrak. Konsul keseluruhan	
	10 - 9 - 2021	ACC. Siap ujian Skripsi	

LEMBAR KONSULTASI

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
1.	28 - 09 - 2020	pengajuan judul	
2.	23 - 12 - 2020	revisi bab 1 - cover - tulisan miring	
3	7 - 1 - 2021	LBM : cek komponen IJKS, cek pengetahu. Lokasi LTT ??	
4	8/2 21	Bab 2 : K. konsep ?? Bab 3 : ker teori rev Bab 4 : Def op, kriteria. Konsultasi ya	
5	10/2 21	Indikator berbeda → blm konsisten.	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
6.	15/2 2021	Acc siap ujian proposal	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
6.	15/2 2021	Acc siap ujian proposal	
7	13/8 2021	Tinjau artikel yg relevan.	
8	18/8 2021	Cek jurnal artikel yg sdh ok. → lngsg analisis & review. Bab 4: ganti → serial dng. LR.	
9	9/9 2021	Bab 3 revisi analisis versi u sama pd metode & hasil Bab 4: Pembhsn FTO.	
10	14/9 2021	Pembahasan: Teori & opini penulis bela ada	

NO.	HARI/TANGGAL	REKOMENDASI	TANDA TANGAN
11.	29/9 2021.	Teori & opini pendukung ditambahkan pd kap artikel yg ditelaah; tdk hy pd akhir pembhsan.	(signature)
12	27/9 2021	Konsul keseluruhan, lengkapi !!.	(signature)
13.	30/9 2021	Ok Acc	(signature)