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Needle Stick Injury

Toxic Effects of Chronic Consumption

Highlights

Reducing House Dust Mite

Biochemical and Haematological Study

Discovering Thoughts, Inventing Future

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Análise Daestrutura Representacional De Jovens Católicos Sobre O HIV

By Pablo Luiz Santos Couto, Antônio Marcos Tosoli Gomes, Mirian Santos Paiva, Rafael PecleyWolter, Marizete Argolo Teixeira & Carlos Alberto Porcino

Resume- Objetivo: Analisar a estrutura das representações sociais de jovens católicos sobre o HIV.

Método: Estudo misto, fundamentado na Abordagem Estrutural da Teoria das Representações Sociais, realizado no Facebook com 84 jovens católicos praticantes. Utilizou-se como técnica a Associação Livre de Palavra. Os dados foram analisados pela do núcleo central a partir do quadro de quatro casas e de similitude, com o auxílio do software Evoque.

Resultados: O núcleo central das representações sociais de jovens de católicos sobre a AIDS é formado tanto por elementos que remetem ao início da epidemia como uma doença que causa tristeza e é oriunda da prática sexual entre homens quanto por novos elementos como uma infecção que tem origem davulnerabilidade de pessoas, e que é passível de prevenção.

Conclusão: Tristeza, homossexualidade, vulnerabilidade e prevenção são os principais elementos que compões o possível núcleo central das representações de jovens católicos sobre o HIV.

Descritores: Síndrome de imunodeficiência adquirida; Religião e sexo;Sexualidade;Enfermagem.

GJMR-K Classification: NLMC Code: QW 168.5.H6

ANAISEDAESTRUTURAREPRESENTACIONALDEJOVENSCATOLICOSSOBREOHIV

Strictly as per the compliance and regulations of:

Análise Daestrutura Representacional De Jovens Católicos Sobre O HIV

Pablo Luiz Santos Couto [α], Antônio Marcos Tosoli Gomes [σ], Mirian Santos Paiva [ρ], Rafael PecleyWolter [ω], Marizete Argolo Teixeira [¥] & Carlos Alberto Porcino [§]

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Descritores: Síndrome de imunodeficiência adquirida; Religião e sexo;Sexualidade;Enfermagem.

I. Introdução

Diante das várias facetas que são disseminada sobre o HIV, há aquelas relacionadas aos discursos e as práticas de jovens inseridos/as e vinculados na Igreja Católica, quesão bombardeados por significados influenciados pela doutrina católica e que são disseminados na sociedade. Este fato se torna relevante quando se ressalta o aumento da incidência do HIV/Aids nos grupos representados por adolescentes e jovens e especialmente quando se considera o futuro curso da epidemia mundial de HIV/Aids, que está relacionado às vulnerabilidades de pessoas jovens e aos fatores contextuais que podem influenciar comportamentos e representações, dentre os quais se destacam as práticas sexuais seguras[2].

A religião Católica, com maior número de adeptos e predominante em todas as regiões do Brasil, possui em suas diversas correntes ideologias doutrinárias, que se constituiu ao longo dos anos comouma ferramente capaz de influenciar e formar opinião sobre assuntos referentes ao sexo e ao modo como as pessoas devem se prevenir de doenças decorrentes desta prática, como a infecção decorrente do HIV. Com isto, a maior parte do discurso oficial da Igreja, se apresenta reafirmando posições tradicionais relativas ao exercício da sexualidade, o que se contrapõe àquele reificado relativo à prevenção da síndrome[1].

Deve-se chamar atenção a esse fato, pois a pessoa quando infectada tem uma alteração nos comportamentos e representações, o que leva a um impacto negativo na sua vida emocional e sexual, como o medo de contaminar o parceiro sexual, ausência de desejo sexual, além das alterações fisiológicas, o que consequentemente interfere na qualidade de vida; isto tem sido evidenciado em alguns estudos internacionais já realizados[3-5].

As representações sociais são como um aporte essencial na observação de ideias e comportamentos do senso comum nas experiências vivenciadas no cotidiano, além de ser essencial para a análise do conhecimento dos grupos populacionais, especialmente quando se considera as dimensões simbólicas que são construídas histórica e socialmente sobre a aids[6-7], neste estudo, os jovens católicos praticantes. Este fato torna-se mais relevante, quando se aponta a complexa relação entre representações e práticas, cujo impacto reside no cotidiano dos jovens que possuem diante de si o desejo e a pulsão sexual em contraste com as diretrizes de sua religião. Neste cenário, objetiva-seanalisar a estrutura das representações sociais de jovens católicos sobre o HIV.

II. Método

Trata-se de um estudo misto, fundamentado na Teoria das Representações Sociais em sua perspectiva da abordagem estrutural. Essa abordagem busca demonstrar a organização da estrutura das representações sociais a partir de um núcleo central, sua parte mais permanente e geradora do sentido presente na representação, e um sistema periférico, que possui relação com as questões mais práticas e cotidianas dos sujeitos, bem como possui a função de proteção do próprio núcleo[6,8].

O trabalho foi submetido e aprovado pelo Comitê de Ética e Pesquisa da Escola de Enfermagem da Universidade Federal da Bahia sob protocolo 878.042/2014. A coleta de dados ocorreu em fevereiro e março de 2015, *online* no*Facebook* com 84 jovens católicos praticantes que participaram da Jornada Mundial da Juventude no Rio de Janeiro em 2012, que

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após convites na página virtual da rede social, se dispuseram a participar. A população compôs, portanto, uma amostra intencional por conveniência, não requerendo cálculo amostral.

Delimitou-se, como critérios de inclusão: jovens adultos/as católicos/as, com idade entre 18 a 24 anos, de ambos os sexos, frequentadores/as de uma paróquia, integrantes de grupos da igreja ligados à Renovação Carismática Católica(RCC) que participaram da Jornada Mundial da Juventude (JMJ) e tornado membro do grupo da JMJ no *Facebook*, cenário virtual do estudo. Foram excluídos os/as jovens que não confirmaram sua participação após o envio e a leitura do Termo de Consentimento Livre e Esclarecido; aqueles/as que frequentavam a igreja regularmente (duas ou mais vezes por semana), mas que não participavam de nenhum grupo.

Foi utilizada a Técnica de Associação Livre de Palavra (TALP) junto aos 84 internautas que compuseram o grupo estudado, com oestímulo indutor "AIDS".As evocações foram analisadas com o auxílio do *software EVOC* 2003 por meioda hierarquização expressa pela frequência e pela ordem média de evocação, através do Quadro de Quatro Casas, onde são distribuídas as palavras evocadas, considerando os critérios supracitados[7-8].

Com o intuito de delimitar o grau de conexidade do conteúdo lexical presentes nas possíveis representações analisadas, procedeu-se a análise de similitude proposta por Flament em 1986[7-8-10]. Após a visualização do quadro de quatro casas, calculou-se a coocorrência dos léxicos que estavam presentesnesse quadro;considerou-se apenas os participantes que evocaram, ao menos, duas palavras, uma vez que uma relação de conexidade somente pode existir entre um e outro termo[7-8]. Deste modo, foram excluídos sete sujeitos que não evocaram pelo menos duas palavras, permanecendo 77 na análise de similitude.Para cálculo dos índices, foi montada a tabela de coocorrências no *software Microsoft Excel* versão 2016, prosseguindo com o cálculo do índice de similitude para cada par de palavras. Com os índices das suas conexões lexicais calculados, foi formada a árvore máxima, que é uma representação gráfica dasligações entre os elementos de uma representação social, sem permitir a formação de ciclos.

III. Resultados

Os resultados são apresentados a partir da caracterização do perfil do grupo estudado, seguida daanálise da estrutura das representações com a descrição do quadro de quatro casas e da árvore de similitude e, por fim, da análise do conteúdo lexical das entrevistas com o dendograma da classificação hierárquica descendente e a sua rede semântica. Parte-se da premissa que é fundamental compreender a representação social em suas diferentes facetas, para este estudo, os consensos e dissensos em suas abordagens processuais e estruturais[7].

O grupo social estudado foi composto por 43 homens e 41 mulheres; a maioria procedente da Bahia (36), Minas Gerais (12), Rio de Janeiro (07) e São Paulo (07); 22 com ensino médio completo, 30 afirmaram ter ensino superior incompleto e 32 com ensino superior completo; 41 se autodeclararam da cor branca, 17 da cor preta e 26 pardas; 61 disseram estar solteiros e 23 casados. A maioria se autodeclarouheterossexual, ainda que 18 afirmaram ter, como orientação sexual, a homossexualidade e 08, bissexuais; no que se refere à prática do sexo seguro com camisinha, 46 afirmaram ter utilizados e 38 não utilizaram. Salienta-se que destes 38, 21 declaram-se virgens e 17 fizeram sexo sem proteção. Sobre a frequência com que iam a igreja, 62 iam de 02 ou 03 vezes por semana e 22 entre 04 e 05 vezes.

Em resposta ao estímulo indutor "AIDS", os jovens católicos apresentaram 415 evocações e, destas, 58 foram diferentes e 25 foram aproveitadas. A frequência mínima adotada foi de 05, considerando que as representações surgem do conhecimento difundido e compartilhado por uma coletividade, cujo aproveitamentos foi 76,9%.O Quadro de quatro Casas construído pelo software EVOC foi organizado e realizado através do cálculo de e análises combinadas a partir da ordem média de evocações (OME)e da frequência média de palavras[7]. Neste estudo, a OME, que está apresentada no eixo vertical, foi gerada em torno de 2,9, por sua vez, a frequência média, percebida no eixo horizontal, foi gerada em torno de 15, possibilitada pela inversão fundamentada na Lei de Zipf, conforme a Figura 1[6-7,11].

Frequência Média	OME < 2,9			OME ≥ 2,9		
	Termo evocado	Freq.	OME	Termo evocado	Freq.	OME
≥ 15	Camisinha	30	2,767	Cura	15	3,933
	Doença	22	2,273	Medo	16	2,938
	Homossexualismo	15	2,600	Morte	18	3,444
	Prevenção	28	2,538	Sexo	21	3,048
	Triste	15	2,667			
	Vulnerabilidade	19	2,789			
< 15	África	13	2,846	Cuidado	14	2,929
	Imoral	5	2,600	Deus	6	3,500
	Preconceito	10	2,700	Irresponsabilidade	13	3,231
	Prostituição	13	2,308	Pecado	7	3,429
				Promiscuidade	8	3,000
				Ruim	7	3,429
				Saúde	9	3,000
				Sofrimento	6	3,500
				Tratamento	9	3,333

Figura 1: Quadro de quatro casas ao termo indutor "AIDS", entre jovens católicos que participaram da Jornada Mundial da Juventude. Salvador, BA, Brasil, 2017. (n=84).

Por ter quatro casas, o quadro tem uma organização em quadrantes. O quadrante superior esquerdo denominado de núcleo central é considerado a parte mais estável e permanente da representação, conferindo-lhe sentido; o inferior esquerdo é denominado zona de contraste onde é percebido um subgrupo representacional, o que significa os dissensos dos grupos que dão significados distintos a algum objeto. Os dois quadrantes localizados no lado direito são a primeira periferia (superior) e a segunda (inferior), em que são expressos o contexto em que as pessoas vivem e o seu contato com a realidade[12].

As palavras do provável núcleo central, são aquelas evocadas com maior frequência e respondida rapidamente. Os termos que aparecem em destaque são "camisinha" e "doença". Estas evocações do sistema central configuram um consenso cognitivo e simbólico do grupo por remeter à memória coletiva[13].Ainda no provável núcleo central se destacam os elementos que configuram possíveis representações hegemônicas e históricas da aids, como "homossexualismo" e "triste",além dos termos atuais como "prevenção" e "vulnerabilidade".

Os cognemasque compõem a primeira periferia "cura", "medo", "morte" e "sexo"reforçam os significados do possível núcleo central. Os elementos do segundo quadrante superior se associam ao do primeiro quadrante por representaremo cotidiano do grupo[13].Na segunda periferia estão os elementos considerados menos importantes (figura 01) e menos frequentes[12-13]:"irresponsabilidade", "promiscuidade" ,"pecado", "deus","ruim", "sofrimento" e "tratamento".

Os elementos com baixa frequência, mas com importância na estrutura representacional[13]dos jovens católicos, no quadrante inferior esquerdo: "áfrica", "imoral", "preconceito" e "prostituição". Estas evocações remetem às representações hegemônicas que podem ser transformações nas representações sociais e não alteram a essência do núcleo central[14].

Após à análise estrutural a partir do quadro de quatro casas, as evocações foramsubmetidasà análise da conexidade dos elementos, no intuito de identificar a relação/associação entre os elementos estruturantes das representações sociais dos jovens católicos através da árvore de similitude (Figura 2), que permite visualizar como as ideiassão concatenadas, dando as representações um caráter multifacetado[7-8,13].

Os resultados emergidos dessa análise corroboram com a estrutura representacional sobre o estímulo "AIDS" verificadas no núcleo central, a partir da análise prototípica e das conexões lexicais entre as palavras com outros termos que configuram os eixos, destacando-se aquelas que estabeleceram as conexões cognitivas mais firmes na árvore: camisinha, prevenção, doença, vulnerabilidade, sexo, doença, morte e triste. Tais palavras compõem tanto o possível núcleo central quanto a primeira periferia, o que caracteriza a força de conexão entre elas para a compreensão das representações sociais desses jovens.

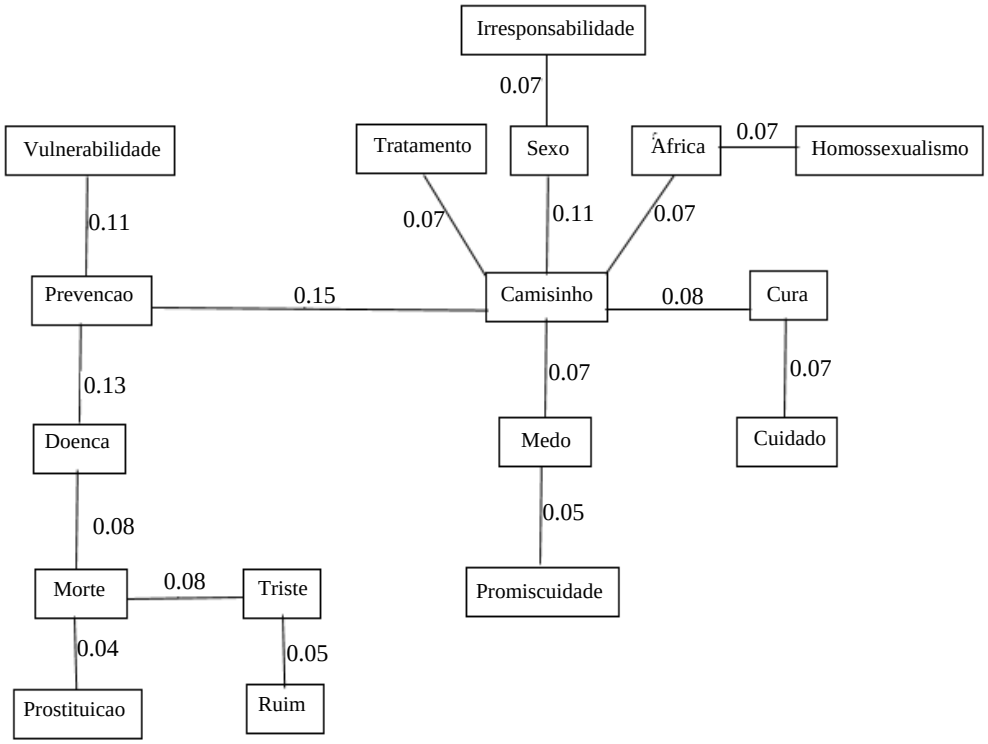

Figura 2: Árvore máxima de similitude das evocações dos jovens católicos. Salvador, BA, Brasil, 2017. (N=78).

Salienta-se que,a análise de similitude, perceptível com a árvore (figura 2) e cujas palavras estão interligadas de modo linear, aponta as indicações da força de conexidade entre o *corpus* de palavras na rede, o que favorece a identificação mais precisa do núcleo central da representação[7-8,13-14].No eixo central da árvore estão as palavras que fizeram as relações mais fortes entre si, as quais estão concatenadas com o pensamento social da aids.

Deve-se chamar atenção para a integração entre dois léxicos que permearam as representações sociais no início da epidemia da aids, ainda na década de 1980: "África" (presente na zona de contraste) e "homossexualismo" (compõe o possível núcleo central).

IV. Discussão

O possível núcleo central das representações sociais dos jovens católicos sobre o HIV foi formado pela associação do termo indutor AIDS, a qual pode ser evitada e prevenida, quer seja através do uso da camisinha durante as práticas sexuais, quer seja pela égide dasnormas morais da religião.Nesta relação, se torna relevante destacar que o cognema camisinha foi o que obteve maior frequência e, ao mesmo tempo, a mais prontamente evocada, fez mais correlações, apresentoumaior força de conexidadee maior khi².

No conjunto de suas representações sociais, o grupo de jovens apresentam um novo repensar da prevenção ao HIV que foge, ao menos em parte,daquilo que é apresentado pela doutrina católica. Eles, ainda que praticantes, representam, de modo progressista, que é possível ser católico, mas, ao mesmo tempo, seguir uma linha de pensamento mais atual, deixando de lado a tradição da castidade, apresentando a"camisinha", sendo corroborado em outro estudorealizado com adolescentes pertencentes a grupos da Renovação Carismática Católica[15].

A camisinha em associação ao léxico "prevenção" comportaram o núcleo central de umestudo acerca das representações sociais do HIV/Aids desenvolvida com profissionais de saúde de serviços de referência, os quais falaram que as mulheres se previnem mais que os homens[16].Em pesquisa, desenvolvida no Zimbábue na África, foi evidenciado que as mulheres eram as melhores pacientes e aderiam mais ao tratamento e ao uso da camisinha do que homens, uma vez que decorre das normas sociais de gênero e nos papeis desenvolvidos por cada um na sociedade zimbabueana, onde as mulheres são mais passivas/submissas, logo, o fato de se relacionar com o profissional de saúde coloca o homem em posição de submissão[5].

A evocação "sexo" também conforma a estrutura das representações sociais de jovens católicos/as e se coaduna com achados de pesquisa realizada com mulheres privadas de liberdade, na qualassociaramas formas de contágio às práticas sexuais condenadas pelas doutrinas igreja católicas, tais como o sexo entre homens, à promiscuidade e ao prazer; e a infecção à palavra 'tristeza'[17], abordando

sentimentos e expondo consequências sociais, como tendência ao isolamento social ou abandono das práticas sexuais[18-19].Contudo, em outro estudo publicado no ano 2016, realizado em cinco países Mali, Marrocos, República Democrática do Congo, Romênia e Equador, verificou que, em decorrência da infecção pelo HIV, muitas pessoas por falta de conhecimento e pelo medo das consequências e da morte, as mulheres, por serem vistas como culpadas por transmitir o vírus aos companheiros e ou filhos, se isolavam sentimentalmente eemocionalmente e cessavam as práticas sexuais, sobretudo [3].

Chama-se atenção na representação,a relação estabelecida entre o continente Africano e o "homossexualismo" no conjunto do pensamento social,quando um estudo apresentou a representação de que a aids teve sua origem na África, o que denota uma associação da doença à grupos estrangeiros e marginalizados, representado pelo continente mais pobre do mundo, cuja população apresenta comportamentos sexuais considerados pecaminosos, como a zoofilia[20].Quanto ao elemento da homossexualidade, denominado de homossexualismo pelos sujeitos, percebeu-se, em um estudo realizado com adolescentes sobre as concepções de homossexualidade que as práticas homossexuais masculinas são representadas como uma prática discriminada pela sociedade, muitas vezes associadas à infecção pelo vírus[21].

O possível núcleo central, sobre a representação do HIV, apresenta elementos que subsidiam o processo de estigmatização de pessoas que optam pela liberdade sexual e individual, como reflexo de uma sociedade patriarcal, incorporadapor um estado que deveria ser laico, a partir das religiões cristãs como a católica[21], mas que tem nas representações termos como homossexuais e prostitutas uma conotação discriminatória para grupos considerados vulneráveis[18-19].

V. Conclusão

Conclui-se que o possível núcleo central das representações sociais de jovens católicos acercado HIVainda é composto por elementos que remetem às representações hegemônicas do início da epidemia da AIDS, como uma síndrome que é triste e se origina da homossexualidade, o que pode reportar ao preconceito que ainda existe na sociedade contra o grupo social dos homens que fazem sexo com homens. Ao mesmo tempo, este núcleo é formado também, por novos elementos, uma vez que consideram que o HIV ou a AIDS decorre da vulnerabilidade de grupos sociais, e que pode ser prevenida, sobretudo pela camisinha, demonstrando que esses jovens têm a estrutura central de suas representações influenciada também pelos conhecimentos científicos.

Este estudo tem como limitação o número de jovens católicos que participaram da pesquisa, uma vez que, o quantitativo desse grupo no Brasil é elevado. Ainda assim, a diversidade de representantes das mais variadas regiões do país, seguidas das multitécnicas de análises que se procederam com os dados coletados, possibilitam fazer generalizações sobre como está estruturado o possível núcleo central das representações sociais de jovens católicos praticantes. Propõe-se que a partir dos resultados, profissionais de saúde reflitam sobre a forma como os jovens católicos religiosos têm representado a aids para, desta forma, reorientar um cuidado congruente com o cotidiano dele, de modo que elespossam adotar práticas sexuais saudáveis.

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Needle Stick Injury: Inevitable or Avertable

By Dr. Abhinav Wankar, Dr. M.K. Saini, Dr. Kanika Jain, Dr. D. K. Sharma & Dr. Kamlesh Chandelia

Introduction- Healthcare workers across the globe are exposed to infectious agents' day in and day out. Increased reliability on diagnostics has increased usage of needles by healthcare personnel while fulfilling their clinical obligations .This has made healthcare personnel prone to injuries. Needle stick injury is an occupational hazard in hospital settings[1,2]. Healthcare workers are at great risk of needle stick injury while administering injections, withdrawing blood, disposing needles, handling linen, biomedical waste segregation etc.[3,4,5,6,7]. The risk of acquiring HIV through needle stick is 0.3%; while, such risk is 3% for hepatitis C, and 30% for hepatitis B8. These injuries are also seen to induce considerable psychological aftermaths such as phobia, anxiety and stress in affected individuals [9,10].

Needle stick injury are injuries caused by needles such as hypodermic needles, blood collection needles ,intravenous stylets and needles used to connect parts of intravenous delivery systems (National Institute for Occupational Safety and Health). The incidence of needle stick injuries among health-care workers varies in different countries. For instance, its prevalence has been reported to be about 66% in Egypt, 45% in Pakistan, 31.4 % in Germany, 46.8% in Saudi Arabia, 45% in Turkey, 50% in Australia and Taiwan and 79.5% in India. It seems that these injuries are more prevalent in developing countries [11].

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Needle Stick Injury: Inevitable or Avertable

Dr. Abhinav Wankar [α], Dr. M.K. Saini [σ], Dr. Kanika Jain [ρ], Dr. D. K. Sharma [ω] & Dr. Kamlesh Chandelia [¥]

I. Introduction

Healthcare workers across the globe are exposed to infectious agents' day in and day out. Increased reliability on diagnostics has increased usage of needles by healthcare personnel while fulfilling their clinical obligations. This has made healthcare personnel prone to injuries. Needle stick injury is an occupational hazard in hospital settings[1, 2]. Healthcare workers are at great risk of needle stick injury while administering injections, withdrawing blood, disposing needles, handling linen, biomedical waste segregation etc.[3, 4,5,6,7]. The risk of acquiring HIV through needle stick is 0.3%; while, such risk is 3% for hepatitis C, and 30% for hepatitis B[8]. These injuries are also seen to induce considerable psychological aftermaths such as phobia, anxiety and stress in affected individuals [9, 10].

Needle stick injury are injuries caused by needles such as hypodermic needles, blood collection needles ,intravenous stylets and needles used to connect parts of intravenous delivery systems (National Institute for Occupational Safety and Health) . The incidence of needle stick injuries among health-care workers varies in different countries. For instance, its prevalence has been reported to be about 66% in Egypt, 45% in Pakistan, 31.4 % in Germany, 46.8% in Saudi Arabia, 45% in Turkey, 50% in Australia and Taiwan and 79.5% in India. It seems that these injuries are more prevalent in developing countries[11].

Reporting of needle stick injury is a type of secondary prevention which is instrumental in early diagnosis and treatment. It is also required to provide psychological treatment to patients to alleviate anxiety. Even for infection control researchers, the NSIs assessment remains problematic, because official NSIs data are often conservative because of widespread underreporting [12]. It is felt that organizations should have robust needle stick injury reporting mechanism and adequate infrastructure.

Despite being aware of the importance of reporting, underreporting of needle stick injuries is a known phenomenon. But little is known about the factors that may be responsible for underreporting. These factors could be individual, organization based on training based. Needle stick injury problem is magnified because of underreporting of Needle stick injuries. Ignorance, lack of understanding gravity of NSI ,lack of Knowledge ,non cooperation of higher staff are some of the factors which cause underreporting needle stick injuries . Knowledge of these factors could help organizations take corrective actions and develop a milieu which encourages reporting of needle stick injuries.

The present study has been conducted with the objective to determine the frequency of needle stick injuries among nurses, their awareness about the existing reporting mechanism at the organization in went of a needle stick injury and determine factors/barriers amongst nurses for reporting needle stick injuries.

II. Material and Methods

1. *Type of Study:* Questionnaire based cross-sectional study
2. *Study Population*: 193 Nurses working in different departments in Tertiary teaching Hospital in North India
3. *Study duration*: Study was conducted from 1st January 2018 to 30th June 2018.
4. *Study Location*: Tertiary Care teaching Hospital in North India
5. *Sample size:* Sample size was calculated based on a previous report of the prevalence of needle sticks and sharps injuries which was 193 were selected considering a possible attrition rate of 25%. Stratified random sampling was performed.
6. *Methodology*: First, the number of staff at each department was assessed. Then, the quota for each department was calculated and selected randomly among the staff at each center. A questionnaire was prepared. The content validity of the questionnaire was determined and modified according to the comments raised by experts. Questionnaire included questions on demographic characteristics (i.e. age, gender, marital status, work experience, job, the highest qualification, working unit and the employment status), the knowledge related to sharps injuries, complications and actions needed to be taken after an injury occurred, the history of exposure to a sharp injury and its causes if occurred, and the actions they have taken after a sharp injury occurred. The characteristics of the occupational exposures including route of exposure and the procedure in which the exposure occurred, place and time of exposure occurrence and viral status of the source patient were also asked. Moreover, data on protective measures used by the HCWs, HBV immunization status and antibody titre,

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number of injuries reported to the hospital and reasons for not reporting such injuries were also collected. Prior to distribution, the questionnaire was piloted to assess its feasibility and to give more information about the problem. The participants were asked to fill-out the unnamed validated questionnaire and collected by Nursing Infection Control Nurses.

7. *Data Analysis:* The data were analyzed using SPSS version 17. Chi-square and Fisher Exact tests were used for all the analyses, while p-values $< 0.05\%$ were considered statistically significant. All the participants were free to enter the study or withdraw from it whenever they wished. The questionnaires were coded then; the collected data were entirely kept secret and anonymously reported.

III. Observations and Results

Total of 193 nurses submitted the questionnaire Following were the observations of study :

a) Distribution of nurses on basis of designation

Out of total 193 nurses, 172 nurses (89.10%) were Junior Nursing Officers and 21 nurses (10.9%) are Senior Nursing Officer.

Table 1: Distribution of nurses on basis of designation

Designation	Number of nurses in study	Percent
Junior Nursing Officer	172	89.1
Senior Nursing Officer	21	10.9
Total	193	100

b) Distribution of nurses according to experience

Out of total 193 nurses, 81 nurses (42%) had experience $<$ 5 years, 78 nurses (40.4%) had experience had experience between 5-10 years and 34 nurses (17.6%) had experience $>$10 years.

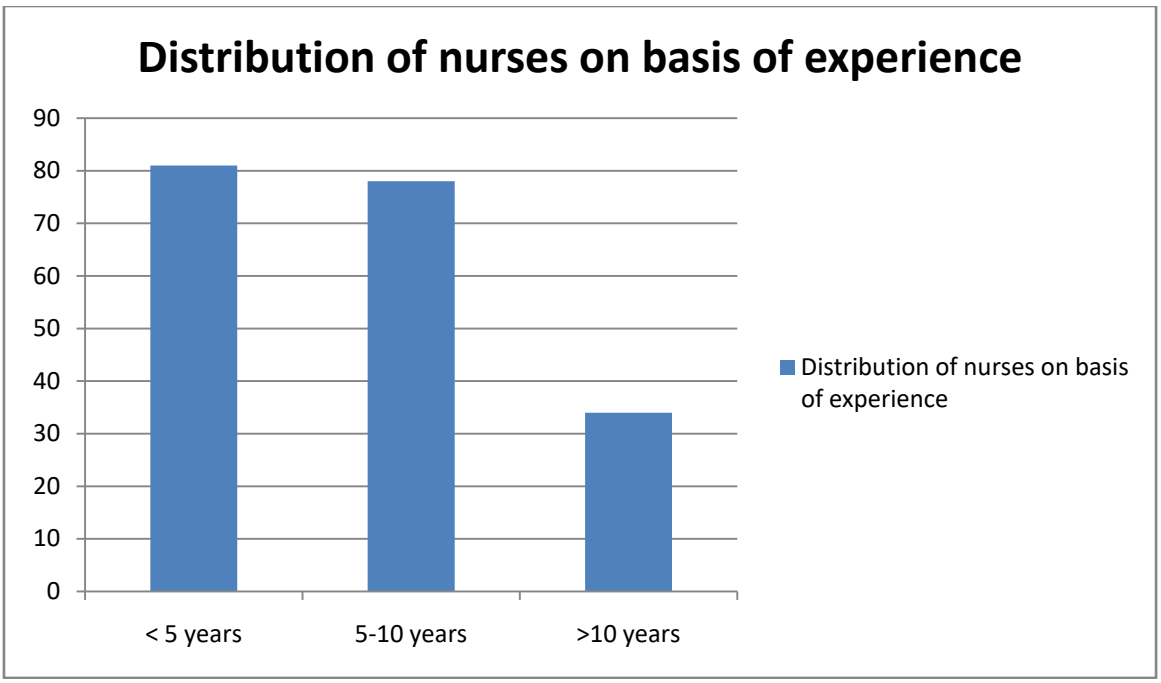


Figure 1: Distribution of nurses in experience

c) Distribution of nurses on basis of area

Following is distribution of nurses on basis of area posted

Table 2: Distribution of nurses on basis of area posted

Area Posted	Number of Nurses	Percentage
General Ward	49	25.4
Private Ward	2	1
Emergency	65	33.7
ICU	15	7.8
OT	27	14.0
OPD	35	18.1
Total	193	100

d) Needle Stick Injury experienced during course of career

Out of total 193 nurses, 112 nurses (58%) had experienced needle stick injury while 81 nurses (42%) had not experienced needle stick injury.

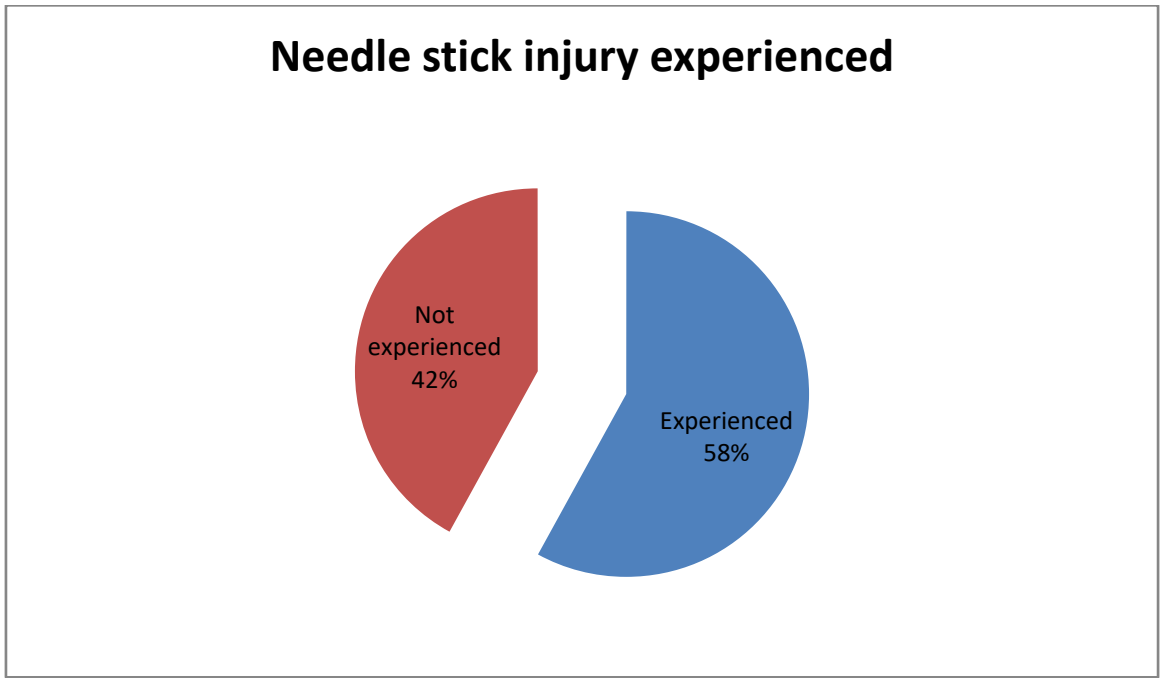


Figure 2: Needle Stick Injury experienced during course of career

e) *Out of nurses who had experience needle stick injury, frequency of needle stick injury experiences*

Table 3: Frequency of needle stick injury

Frequency of needle stick injury	Number of nurses	Percentage
1-3 times	85	75.89
3-5 times	26	23.21
Total	111	100

f) *Frequency of needle stick injury reported*

Out of 112 nurses who had needle stick injury, 63 nurses reported needle stick injury. Out of these 60 nurses (95.23%) had reported it 1-3 times and 3 nurses (4.7%) had reported it 3-5 times. 3 nurses did not give any response

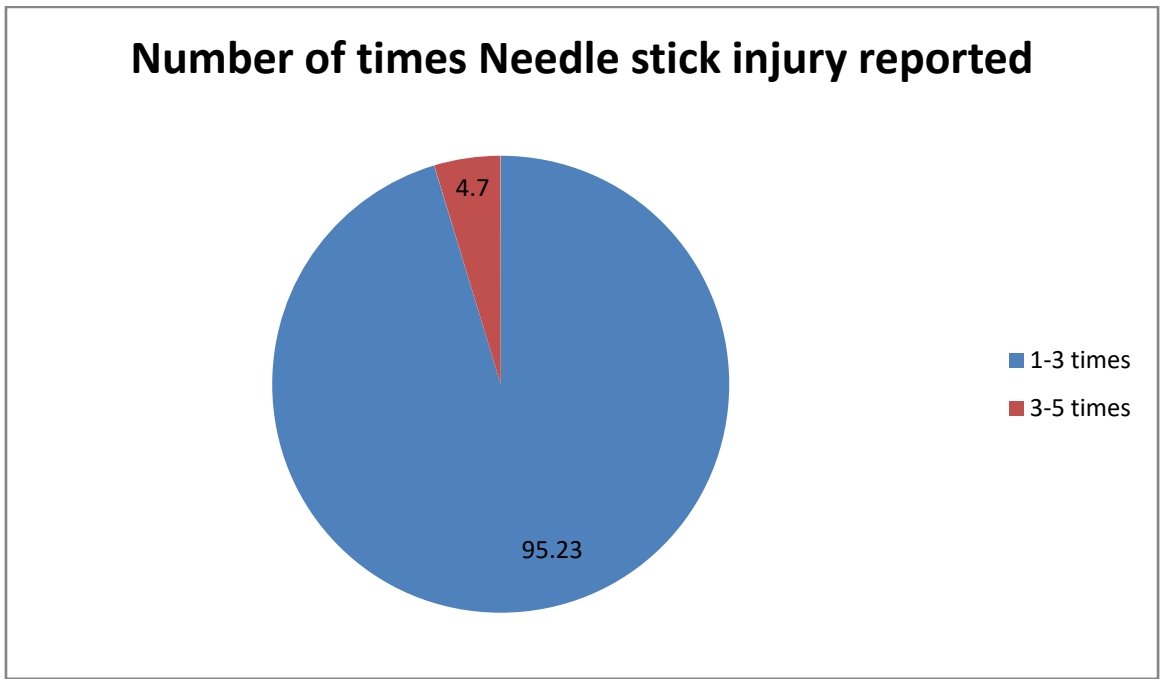


Figure 3: Number of times needle stick injury reported

g) Reasons the Needle Stick Injury have not been reported

Table 4: Reasons the Needle Stick Injury have not been reported

Sr No.	Reasons the Needle Stick Injury has not been reported	Number of Nurses reporting the reason of not reporting	Percentage of nurses among who had experienced needle stickinjury
1	Needle stick injury by sterile needle	32	28.57
2	Lack of awareness about policy	39	34.82
3	Lack of knowledge about NSI	84	75
4	Workload	24	21.42
5	ART side effects	7	6.25
6	Infrastructure	30	26.78
7	Patient report negative	13	11.60

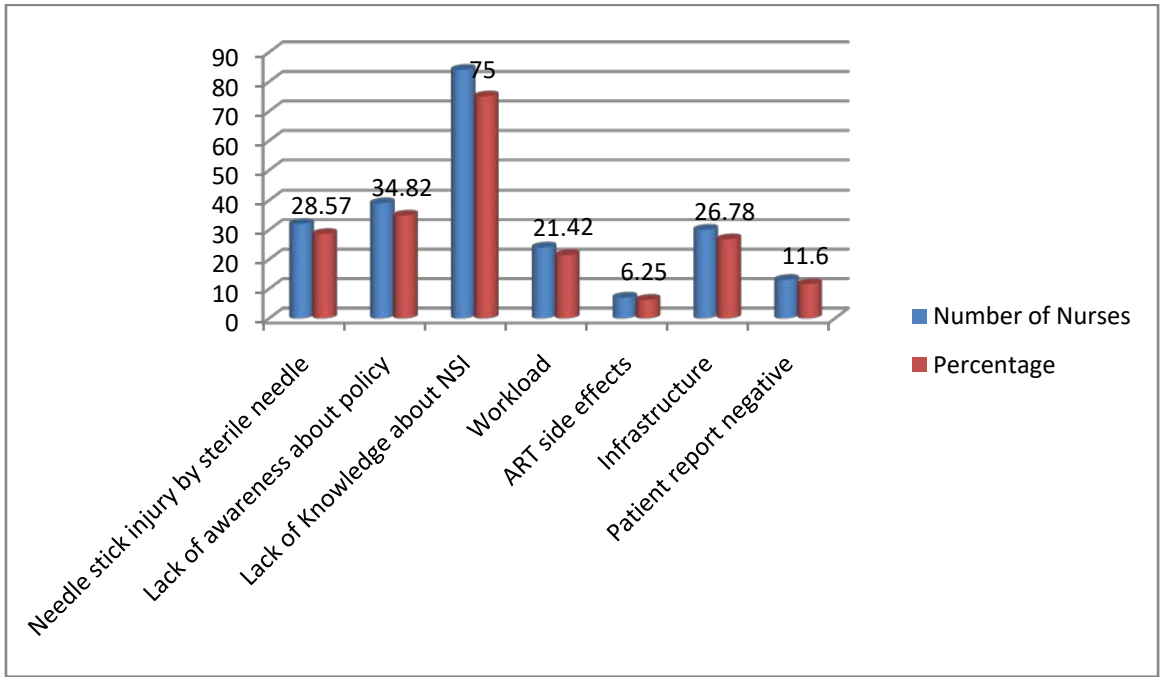


Figure 4: Reasons the Needle Stick Injury have not been reported

h) Factors responsible for occurrence of NSI

According to nurses, factors responsible for occurrence of NSI

Table 5: Factors responsible for occurrence of NSI

Factors Responsible for occurrence of NSI	Number of nurses	Percentage of nurses
NSI while Performing Procedure	148	76.66
Work Overload	115	59.58
Improper Handling during Procedure	109	56.47
Negligence during procedure	105	54.40
During BMW segregation	112	58.03

i) Study population who are vaccinated for Hepatitis B

Out of the total study population 160 (82.90 %) nurses were previously vaccinated for Hepatitis B and 33 (17.10%) population were not vaccinated for Hepatitis B

Correlation of NSI with vaccination is not significant (P= 0.9)

Study Population Who Were Aware Of Existing Policy On Needle Stick Injury In The Institute

Out of total 193 nurses, 75 (38.9 %) nurses were aware of existing policy on Needle Stick Injury in the institute while 118 (61.1%) nurses were not aware of existing policy.

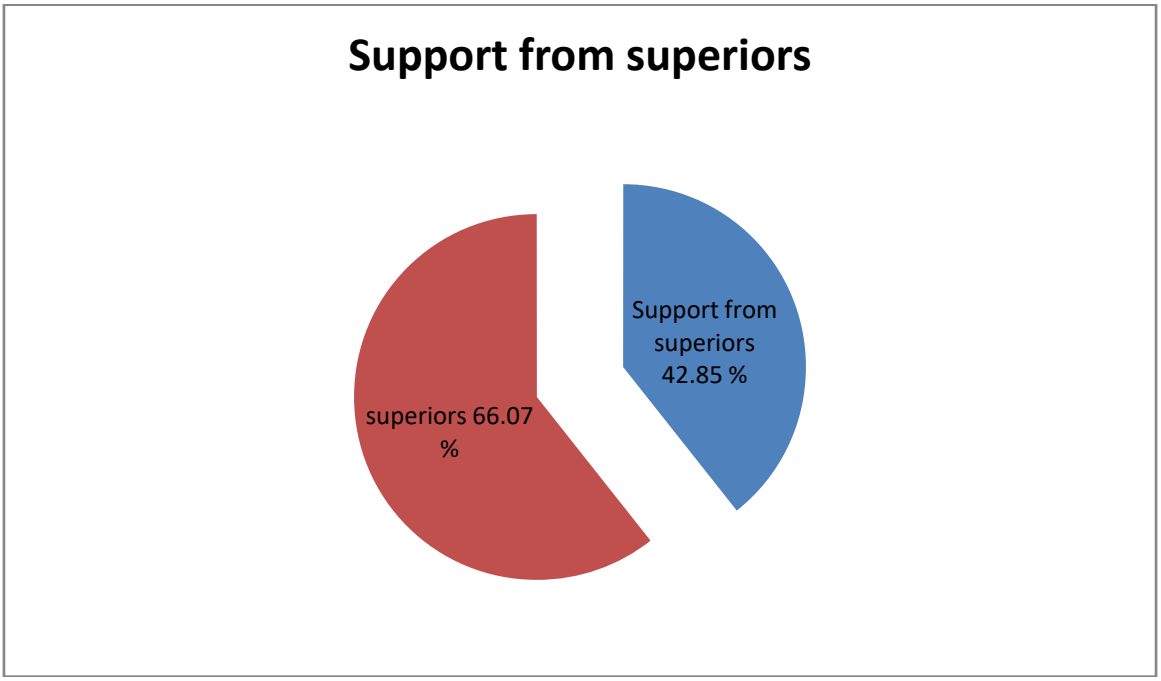
Table 6: Study population who were aware of existing policy on Needle stick injury in the Institute

Sr No.	Number of nurses who are aware of policy	Percentage
Aware of existing policy	75	38.9
Not aware of existing policy	118	61.10

The correlation of NSI with policy was strongly significant (P=0.01)

j) Needle stick injury with support received from superiors

Out of total 112 nurses who had experienced needle stick injury, 48 (42.85%) had received support from superiors and 74 (66.07%) had not received support from superiors



Correlations of reporting of Needle stick Injury with support of superiors was significant (P=0.000)

k) Needle stick injury with years of experience

The correlation between needle stick injury and years of experience was not significant (P=0.801) .This indicates that needle stick injury experienced is not dependent on years of experience.

IV. Discussion

Needle stick injuries amongst Nurses working in Tertiary care Hospital in North India. This study attempted to unravel the various factors that hinder reporting of Needle Stick Injury among Nursing Officers in a tertiary care setup. In the present study, 58 % nursing officer had experienced needle stick injury. This result is similar with results of study conducted by Arman Azadi amongst Iranian nurses which stated that more than one third of nurses have experienced needle stick injury.[13] The similar results may be due to similar hospital setup and similar study population.

The study showed correlation between needle stick injuries with years of experience as negative. This result was similar with result conducted by Dr .S. Salelkar and team in tertiary care hospital in Goa. The result is similar as the study was conducted in similar environment .[14] However results were contrary to study findings Telali *et al*.[15] in their study in south India reported that as work experience increased the incidence of needle stick injuries decreased. The results were contrary as the study conducted by Telali et al comprised of all healthcare workers .Hence the level of knowledge and experience were very varied among study population. As a result increase in experience will increase level of knowledge.

In this study, lack of knowledge whether to report NSI was the main cause of undereportng. However lack of awareness of NSI policy, NSI by sterile needle, infrastructure, workload, infrastructure and sero negative patient report, ART side effects were other causes of underreporting. These findings were similar to findings of Arman Azadi [13]. Also studies conducted by Dr Rambha Pathak and team reported that majority of the HCWs who suffered NSI did not report to the hospital administration.[16] The commonest reason cited for this was fear of being considered unskilled followed by not knowing where to report and lack of time. Another author has also reported that 90% never reported because they were not aware of the importance of post-exposure prophylaxis.[17] In study conducted by Cathy

Voide et al in Infectious Diseases Service, University Hospital, Lausanne, Switzerland[18] underreporting was more in doctors than other Healthcare workers. Low underreporting among 'others' and domestic staff and high underreporting among doctors is a phenomenon of desensitization: the more a HCW is exposed to NSSI-prone activities and the more NSSIs are sustained, the more relaxed the HCW becomes with respect to reporting.

In the present study, majority of participants have stated that NSI is experienced during performing any procedure. Other causes stated were due to workload and during BMW segregation. This finding was similar to findings of Dr Rambha Pathak et al in MM Institute of Medical Sciences and Research, Mullana which stated 56.9% injuries were from a hollow borrow needle and also mentions that 48 % of needle stick injury occurred during disposal of needles. In study conducted by Ruben et al, long working hours has also been found to be an important risk factor for NSI.[19]

The health care environment in a tertiary care hospital is a hectic and stressful one and long duty hours are common. It is important that time management is done appropriately to avoid work stress .Given the dangers of disease transmission through needle stick injuries, the surprising lack of awareness of these dangers and the corrective actions to be taken post injury makes it imperative to address this issue urgently. Healthcare staff needs to be trained in universal precautions, proper sharps disposal and action to be taken in case of injury needs to be given to all categories of health care workers. The hospital needs to have a uniform needle stick injuries policy covering safe work practices, safe disposal of sharps, procedures in event of needle stick injury, training including pre-employment training, monitoring and evaluation of needle stick injuries and procedures for reporting needle stick injuries.[14] Healthcare workers need to be made aware of the needle stick injury policies.

V. Conclusion

Constant education, workshops or life-long short training is an integral to developing awareness amongst health care workers and improving adherence to good clinical practice and concordance with policy and procedures. Efforts should be made to explore alternatives of inventories, devices with safety measures .Ensuring adequate and continuous education and training in safe use and disposal of needles can reduce the incidence to a great extent. NSI surveillance mechanism must be developed in the hospital and preventive practices like vaccinations for hepatitis B, institution of appropriate PEP, psychological support and counseling of affected HCWs and stringent follow-up must be ensured. Averting NSI is a continuous process and requires a stringent policy to create safe and fair environment for employees.

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Toxic Effects of Chronic Consumption of Ogogoro (Local Gin): A Biochemical and Haematological Study in Some Male Consumers in Ajegunle Nigeria

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Toxic Effects of Chronic Consumption of Ogogoro (Local Gin): A Biochemical and Haematological Study in Some Male Consumers in Ajegunle Nigeria

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Abstract- The aim of this study was to assess the toxic effects of chronic consumption of ogogoro (local gin) on some biochemical and haematological parameters. Six ml of fasting blood sample was collected via venipuncture technique from seventy five apparently healthy volunteers grouped into three with twenty five per group. Group one consisted of the non consumers of ogogoro (control group). Group two consisted of consumers of ≤5cl of ogogoro (local gin) as a single dose/day for≥6 months (experimental group one). Group three consisted of consumers of ≥50cl of ogogoro (local gin) in divided dose/day for ≥6months (experimental group two).The following biochemical and haematological parameters: alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, total bilirubin, urea, creatinine, uric acid, C-reactive protein, fasting blood sugar, haemoglobin, erythrocytes sedimentation rate, white blood cells and red blood cells were measured quantitatively. The results of chronic consumers of ≤5cl of ogogoro (local gin) showed no statistical significant differences (p ≥0.05) in the mean values of all the measured biochemical and haematological parameters (experimental group one) as compared to that of the control group. However, 20%,12%,12%,16%, 12%, 8%, 8%, 8%, 16% and 8% of these consumers had elevated concentrations of alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, total bilirubin, urea, creatinine, uric acid, C-reactive protein, fasting blood sugar and erythrocytes sedimentation rate above the respective existing maximum reference ranges while 8%, 12% and 8% had decreased concentrations of haemoglobin, white blood cells and red blood cells below the respective existing minimum reference ranges. The results of chronic consumers of ≥50cl of ogogoro (ogogoro) showed statistical significant (p≤0.05) elevations in the mean values of alanine aminotransferase, aspartate aminotransferase, total bilirubin, uric acid, C-reactive protein and fasting blood sugar (experimental group two) as compared to that of the control group while that of urea, creatinine and erythrocytes sedimentation rate showed no statistical significant differences as compared to that of the control group. The percentage of consumers in this group with concentrations above the existing maximum reference ranges for the measured biochemical and haematological parameters: alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, total bilirubin, urea, creatinine, uric acid, C-reactive protein, fasting blood sugar and erythrocytes sedimentation rate were 80%, 60%, 52%, 56%, 12%, 8%, 60%, 60%, 72% and 24% respectively while 64%, 60% and 64% respectively in this group showed decreased concentrations of haemoglobin, white blood cells and red blood cells below the existing minimum reference ranges of the measured haematological parameters. In conclusion, chronic and excessive consumption of ogogoro (local gin) may be harmful to human health.

Keywords: toxic effects, chronic consumption, ogogoro, biochemical study, haematological study, male, nigeria.

I. Introduction

The local gin otherwise referred to as "ogogoro" is an alcoholic drink that is very common in West Africa (1) particularly in Nigeria where it is nicknamed as akpeteshie, push me I push you, sapele water, wuru, kaikai, kparaga, ufofob, baba-erin, eyinbogo, robirobi etc (2).

This local gin (ogogoro) is distilled from the juice of raphia palm tree via local fermentation that involves the incision of the trunk of the tree with the juice collected in a gourd placed by the trunk of the tree after 1-2 days followed by its extraction and boiling of the sap thus forming steam which is condensed and subsequently collected for consumption (1).

The production of this local gin which has ethanol as the active ingredient within the range of 30-60% is mainly carried out by amateur brewers, which however makes it presumably dangerous to human health thus causing intoxication and neurotoxicity when consumed in large quantity (3).

In 2002, it was reported by some researchers that alcohol consumption was responsible for 41% of fatal road accident as well as systemic pro-inflammatory changes via intestinal routes as a result of the alteration of intestinal microbiota composition which in turn initiate the increase release of lipopolysacchaide (dysbiosis) as well as degradation of the intestinal mucosal barrier integrity (4) hence leading to its elevation in the portal vein, liver and systemic circulation. This situation in turn influences the liver immune cells to release reactive oxygen species (ROS), chemokines, leukokrienes and

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cytokines which trigger tissue inflammation that may contribute to organ pathology (5).

Despite its presumable danger to human health which has attracted public health interest as reported by (6) this local gin (ogogoro) still plays a vital role in various religious and social ceremonies in Nigeria. It is in view of this, coupled with its indiscriminate and excessive rate of consumption among the populace including men, women and adolescent both male and female that this present study which is aimed at assessing its toxic effects on some biochemical and haematological parameters in humans was initiated.

II. Materials and Methods

Seventy five apparently healthy male volunteers between the ages of 30-40 years were recruited for this study. These volunteers were grouped into three as shown: Group one consisted of twenty five volunteers with no evidence of ogogoro (local gin) consumption before and during the course of this study (control group). Group two consisted of twenty five volunteers addicted to chronic consumption of ≤5cl of ogogoro (local gin) as single dose/day for a period of ≥6months (experimental group one). Group three consisted of twenty five volunteers addicted to chronic consumption of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two). As at the time of conducting this research work all the recruited volunteers were free from any ailment(s) and besides they were not addicted to cigarette smoking, drugs and coffee abuse which rules out the possibility of any effects of their lifestyle variables on the obtained results. Other physical data such as age, quantity of ogogoro (local gin) drunk per day and the duration of consumption were also obtained from these recruited volunteers whose consents and approval were sought and got before their blood specimens were collected for this research work. All the data obtained from the recruited volunteers were through open questions.

6ml fasting blood specimen was collected via venipuncture technique from each of the recruited subjects with 3ml dispensed into plain (non anticoagulated) bottles, 1ml dispensed into sodium fluoride/potassium oxalate anticoagulated bottles and mixed gently while the remaining 2ml dispensed into ethylene diamine tetraacetic acid (EDTA) anticoagulated bottles and mixed gently as well. The blood specimens in the plain (non anticoagulated) bottles were allowed to clot, retracted carefully and spun alongside the blood specimens in the sodium fluoride/potassium oxalate anticoagulated bottles using a Gulfex Medical and Scientific Macro Centrifuge, Model 800D England.

The sera obtained from the spun clotted blood specimens in the plain (non anticoagulated) bottles were used for the quantitative measurement of the following biochemical parameters with the specified methods using S23A13192 model spectrophotometer: alanine aminotransferase (ALT), colorimetric method as described in the manual of 11th February, 2009 revised edition of Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT294QY, United Kingdom (7,8) aspartate aminotransferase (AST), colorimetric method as described in the manual of 5th January, 2007 revised edition of Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT294QY, United Kingdom (9,10), alkaline phosphatase (ALP), colorimetric endpoint method as described in the manual of September, 2001 revised edition of Teco Diagnostics, 1268 N. Lakeview Avenue, Anaheim, CA 92807 1-800-222-9880 (11), total bilirubin, Jendrassik and Grof method as described in the manual of Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT294QY, United Kingdom (12), urea, urease berthlot's method as described in the manual of 7th January, 2011 revised edition of Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT 294QY, United Kingdom (13-16), creatinine, Jaffe reaction method previously described by Jaffe in 1886 and revised on the 15th September, 2010 by Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT294QY, United Kingdom (17,18), uric acid, enzymatic colorimetric method as described in the manual of 20th October, 2009 revised edition of Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT294QY, United Kingdom (19,20), C-reactive protein, Latex turbidimetry method as described by Spin-react Diagnostic manual Spain (21,24) while the plasma obtained from the spun blood specimen in the sodium fluoride/ptassium oxalate anticoagulated bottles was used for the quantitative measurement of fasting blood sugar using glucose oxidase/peroxidase.method as described in the manual of Randox Laboratories Limited, 55, Diamond Road, Crumlin, County Antrim, BT 294QY, United Kingdom (25). The blood samples in the ethylene diamine tetraacetic acid (EDTA) anticoagulated bottles were used for the quantitative measurement of the following haematological parameters using the specified methods: haemoglobin, cyan methaemoglobin method as described by (26), erythrocyte sedimentation rate (ESR), westergren method as described by (27), total white blood cells (WBC's) count and red blood cells (RBC's) count, improved neubauer chamber counting method as described by (28).

Statistical analysis: The results obtained were expressed as mean and standard deviation, while the differences between the control and experimental groups were assessed using the student's 't' tests with the results considered statistically significant at $p \leq 0.05$.

III. Results and Discussion

In this study comparison was made between the mean values of the serum/plasma biochemical

parameters in the chronic consumers of ≤5cl of ogogoro (local gin) as single dose/day for a period of ≥6months (experimental group one) and that of the non consumers of ogogoro (local gin) referred to as the control group as shown in Table 1. Comparison was also made between the mean values of the blood haematological parameters in the chronic consumers of ≤5cl of ogogoro (local gin) as single dose/day for a period of ≥6months (experimental group one) and that of the non consumers of ogogoro (local gin) referred to as the control group as shown in Table 2 while Table 3 shows the percentage of non consumers of ogogoro (local gin) referred to as the control group and chronic consumers of ≤5cl of ogogoro (local gin) as single dose/day for a period of ≥6months (experimental group one) with abnormal values compared with the existing reference ranges of the measured biochemical and haematological parameters.

Table 4 shows the comparison between the mean values of the serum/ plasma biochemical parameters in the chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) and that of the non consumers of ogogoro (local gin) referred to as the control group while Tables 5 shows the comparison between the mean values of blood haematological parameters in chronic consumers of ≥50cl of ogogoro (local gin) in divided dose /day for a period of ≥6months (experimental group two) and that of the non consumers of ogogoro (local gin) referred to as the control group. The percentage of non consumers of ogogoro (local gin) referred to as the control group and chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) with abnormal values compared with the existing reference range of the measured biochemical and haematological parameters are as shown in Table 6.

As shown in Tables 1 and 2 respectively the mean values of all the measured biochemical and haematological parameters in the chronic consumers of ≤5cl of ogogoro (local gin) as a single dose/day for a period of ≥6months (experimental group one) are not statistically different significantly ($p \geq 0.05$) as compared with that of the non consumers of ogogoro (control group). However, the results revealed 20%, 12%, 12%, 16%, 12%, 8%, 8%, 8%, 16% and 8% of these chronic consumers as having values higher than the existing maximum reference ranges of alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), total bilirubin, urea, creatinine, uric acid, C-reactive protein (CRP), fasting blood sugar (FBS) and erythrocytes sedimentation rate (ESR) respectively as compared with the control group whose alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP), total bilirubin, urea, creatinine, uric acid, C-reactive protein (CRP), fasting blood sugar (FBS) and erythrocytes sedimentation rate (ESR) were within the existing reference ranges as shown in Table 3. Besides, 8%, 12% and 8% of these chronic consumers had lesser values below the existing minimum reference ranges of haemoglobin, white blood cells (WBC's) and red blood cells (RBC's) respectively as compared with the control group whose haemoglobin, white blood cells (WBC's) and red blood cells (RBC's) were within the existing reference ranges as shown in Table 3..

The mean values of the serum liver enzymes: alanine aminotransferase (ALT), aspartate aminotransferase (AST) and alkaline phosphatase (ALP) were significantly higher statistically ($p \leq 0.05$) in the chronic consumers of≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) as compared with that of the control group as shown in Table 4. These findings as established in this study and in agreement with the research work of (6) are presumed to be affiliated with damage to the liver which may be as a result of the bioaccumulation of some toxic chemicals in ogogoro (local gin) which probably would have led to the leakage of these enzymes from its intracellular compartment with their resultant elevation in the serum. However, 80%, 60% and 52% of these chronic consumers had higher values of alanine aminotransferase, aspartate aminotransferase and alkaline phosphatase than their respective existing maximum reference ranges as compared with the control group whose alanine aminotransferase, aspartate aminotransferase and alkaline phosphatase were within the existing reference ranges as shown in Table 6.

The mean value of total bilirubin was significantly higher statistically ($p \leq 0.05$) in the chronic consumers of≥50c l ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) as compared with that of the control group as shown in Table 4.. The mechanism responsible for this elevation is not understood. However, 56%, of these chronic consumers had higher values of total bilirubin than the existing maximum reference range as compared with the control group whose total bilirubin were within the reference range as shown in Table 6.

The mean values of urea and creatinine in the chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) showed no statistically significant differences ($p \geq 0.05$) as compared with that of the control group as shown in Table 4. However, 12% and 8% of these chronic consumers had higher values of urea and creatinine than the existing maximum reference ranges respectively as compared with that of the control group whose urea and creatinine were within the existing reference ranges as shown in Table 6. From these findings it is presumed that chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a

period of≥6months may not be at risk of renal dysfunction.

The mean value of uric acid in the chronic consumers of≥50cl of ogogoro (local gin) in div ided dose/day for a period of ≥6months showed statistical significant elevation (p≤0.05) as compared with that of the control group (Table 4). Despite the fact that the mechanism as related to this elevation is not clearly understood, it is presumed that consumption of≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months may influence uric acid synthesis. This presumption is however in agreement with the research work of (29) who reported an elevation in serum uric acid level as a result of chronic and excessive consumption of alcohol. However, 60% of these chronic consumers showed higher values of uric acid than the existing maximum reference range as compared with that of the control group whose uric acid were within the existing reference range as shown in Table 6. From this finding it is presumed that chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a period of ≥6months may be at risk of gout if the consumption rate is not regulated.

The mean value of the serum C-reactive protein was significantly elevated statistically (p≤0.05) in the chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) as compared with that of the control group as shown in Table 4.. This finding as established in this study is presumed to be due to the systemic response of the chronic consumers to toxic chemicals in the ogogoro (local gin) which may have caused damage to some organs particularly the liver thus leading to disease condition and subsequently inflammation with the resultant release of interleukin 6 as well as other cytokines by the liver which in turn trigger the synthesis of C-reactive protein (CRP).

However 60% of these chronic consumers had elevated values of C-reactive protein (CRP) than the existing maximum reference range as compared with that of the control group whose C-reactive protein (CRP) were within the existing reference range as shown in Table 6. From this finding it is presumed that chronic consumers of≥5 0cl ogogoro (local gin) in divided dose/day for a period of ≥6months may be at risk of organs inflammation.

This research work went further to unveiled the statistically significant elevation (p≤0.05) of the mean value of fasting blood sugar in the chronic consumers of ≥50cl of ogogoro (local gin)/day in divided dose for a period of ≥6months (experimental group two) as compared with that of the control group as shown in Table 4. This finding as established in this study is presumed to be caused by the decreased secretion of insulin which may be as a result of the adverse effects of the toxic chemicals in ogogoro (local gin) on the pancrease thus leading to its impairment and regulation of the body sugar level. The study further revealed that 72% of the chronic consumers of ≥50cl of ogogoro (local gin)/day in divided dose for a period of ≥6months had elevated values of fasting blood sugar (FBS) than the existing maximum reference range as compared with the control group whose fasting blood sugar were within the existing reference range as shown in Table 6. This finding as established in this study shows that chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a period of ≥6months may be at risk of hyperglycaemia.

The haematological results showed that the mean value of haemoglobin (Hb) in the chronic consumers of ≥50cl of ogogoro (local gin)/day in divided dose for a period of ≥6months (experimental group two) was significantly lower (p ≤0.05) statistically as compared with that of the mean value of the control group as shown in Table 5. This finding as established in this study may be attributed to the toxic effects of excessive consumption of the ogogoro (local gin) on haematopoietic system. The result of this study further revealed that 64% of these chronic consumers had lower value of haemoglobin below the existing minimum reference range as compared with that of the control group whose haemoglobin value were within the existing reference range as shown in Table 6.This finding as established in this study shows that chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a period of≥6months may be at risk of anaemia as a result of reduced red blood cells production.

The mean value of erythrocyte sedimentation rate (ESR) in the chronic consumers of ≥50cl ogogoro (local gin) in divided dose for a period of ≥6months (experimental group two) showed no statistically significant difference (p≥0.05) as compared with that of the control group as shown in Table 5. However 24% of these chronic consumers had elevated value of erythrocyte sedimentation rate (ESR) than the existing maximum reference range as compared with that of the control group whose erythrocytes sedimentation rate (ESR) value were within the existing reference range as shown in Table 6. This finding which showed insignificant percentage of the chronic consumers of ≥50cl ogogoro (local gin) in divided dose/day for a period of≥6months as having elevated erythrocytes sedimentation rate (ESR) is not clearly understood.

This study went further to reveal a statistically significant decrease (p≤0.05) in the mean value of total white blood cells (WBC's) in the chronic consumers of ≥50cl/day of ogogoro (local gin)/day in divided dose for a period of ≥6months (experimental group two) as compared with that of the mean values of the control group as shown in Table 5. This finding as established in this study shows that chronic consumption of ≥50cl/day of ogogoro (local gin)/day in divided dose for a period of≥6months has toxic effects on white blood cells (WBC's). This presumably may be as a result of its

ability to suppress white blood cells (WBC's) production. Further finding as related to the white blood cells revealed that 60% of these chronic consumers had lower value of white blood cells (WBC's) below the existing minimum reference range as compared to that of the control group whose white blood cells (WBC's) value were within the existing reference range as shown in Table 6.

The mean value of red blood cells (RBC's) in the chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) revealed a statistically significant decrease ($p \leq 0.05$) as compared with that of the control group as shown in Table 5. This finding however, is suggestive that chronic and excessive consumption of ogogoro (local gin) may have toxic effects on the red blood cells metabolism. However 64% of these chronic consumers had lower value below the existing minimum reference range as compared with that of the control group whose red blood cells (RBC's) value were within the existing reference range as shown in Table 6.

IV. Conclusion

In conclusion chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months may be at the risks of developing some medical problems such as liver disease, gout, organs inflammation, hyperglyceamia, anaemia etc while chronic consumers of ≤5cl of ogogoro (local gin) as a single dose/day for a period of ≥6months may not be at the risk of developing such problems.

Recommendations: It is therefore recommended that:

i. Chronic consumption of ≥50cl of ogogoro (local gin) in divided dose/ day for a period of≥6months s hould be discouraged.
ii. Chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥ 6 months should check their health status regularly in order to prevent further health complications
iii. Chronic consumers of ≤5cl of ogogoro (local gin) as a single dose/day for a period of ≥ 6months are also advised to take precaution by checking their health status regularly.

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Table 1: Blood Biochemical Parameters In Chronic Consumers of ≤5cl Of Ogogoro (Local Gin) As A Single Dose/Day for A Period Of ≥6months (Experimental Group One) Compared With Non Consumers of Ogogoro (Control Group)

Parameters measured	Control (n=25)	Chronic consumers (n=25)	Remark
ALT(U/l)	9.00 ± 0.85	9.04 ± 0.86	NS
AST(U/l)	8.20 ± 0.67	8.18 ± 0.65	NS
ALP (IU/L)	20.50 ± 1.84	20.56 ±1.85	NS
Total Bil (μmol/l)	14.22 ± 0.54	14.56 ± 0.58	NS
Urea(mmol/L)	8.50 ± 1.02	8.54 ± 1.03	NS
Creatinine (μmol/l)	58.20 ± 2.10	58.50 ± 2.12	NS
Uric acid(μmol/l)	250.00 ± 3.75	250.10 ± 3.79	NS
CRP (mg/L)	2.70 ± 0.22	2.71 ± 0.23	NS
FBS (mmol/L)	4.00± 0.43	4.03 ± 0.45	NS

Keys:
N Represents The Number Of Subjects
Ns Represents Not Significant
Alt Represents Alanine Aminotransferase
Ast Represents Aspartate Aminotransferase
Alp Represents Alkaline Phosphatase
Total Bil Represents Total Bilirubin
Crp Represents C-Reactive Proteins
Fbs Represents Fasting Blood Sugar

Table 2: Blood haematological parameters in chronic consumers of ≤5cl of ogogoro (local gin) as a single dose/day for a period of ≥6months (experimental group one) compared with non consumers of ogogoro (control group)

Parameters measured	Control (n=25)	Chronic consumers (n=25)	Remark
Hb (%)	12.0 ± 0.27	12.2 ± 0.28	NS
ESR (mm/hour)	4.0 ± 1.02	3.8 ± 1.03	NS
Total WBC (cmm)	10, 000 ± 3.75	10,200 ± 3.80	NS
RBC (cmm)	5,500 ± 1.70	5,700 ± 1.72	NS

Keys:
Ns Represents Not Statistically Significant
N Represents the Number of Subjects
Hb Represents Haemoglobin
Esr Represents Erythrocytes Sedimentation Rate,
Wbc Represents White Blood Cell
Rbc Represents Red Blood Cell

Table 3: Percentage of chronic consumers of ≤5cl of ogogoro (local gin) as single dose/day for a period of ≥6months (experimental group one) and non consumers of ogogoro (control group) with abnormal values compared with the existing reference range of the measured biochemical and haematological parameters

Parameters	Reference Range	Control Group (n=25)	Experimental Group (n=25)
ALT	Upto 12.0 U/l	0 (0)	* 20 (5)
AST	Upto 12.0 U/l	0 (0)	*12 (3)
ALP	9-35 IU/L	0 (0)	*12 (3)
T.BIL	Upto 17.0 μmol/L	0 (0)	*16 (4)
Urea	1.7-9.1mmol/L	0 (0)	*12 (3)
Creatinine	53-97μmol/L	0 (0)	* 8 (2)
Uric acid	142-416 μmol/L	0 (0)	* 8 (2)
CRP	≤6.0 mg/L	0 (0)	* 8 (2)
FBS	4.2-6.4 mmol/L	0 (0)	* 16 (4)
Haemoglobin	12-15 g/dL	0 (0)	**8 (2)
ESR	3-7 mm	0 (0)	* 8 (2)
WBC	4.0-11×10^3 cmm	0 (0)	**12 (3)
RBC	4-6 ×10^3 cmm	0 (0)	** 8 (2)

Number of subjects is in parenthesis while values are in percentage
***=Percentage elevation than the existing maximum reference range for the measured biochemical and haematological parameters in the chronic consumers*
****=Percentage decrease below the existing minimum reference range for the measured haematological parameters in the chronic consumers*

Table 4: Blood biochemical parameters in chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/ day for a period of ≥6months (experimental group two) compared with non consumers of ogogoro (control group)

Parameters measured	Control (n=25)	Chronic consumers (n=25)	Remark
ALT(U/l)	9.00 ± 0.85	27.70 ± 2.04	S
AST(U/l)	8.20 ± 0.67	22.30 ± 1.72	S
ALP (IU/L)	20.50 ± 1.84	51.00 ± 2.93	S
Total Bil (μmol/l)	14.22 ± 0.54	33.56 ± 1.28	S
Urea(mmol/L)	8.50 ± 1.02	8.57 ± 1.04	NS
Creatinine (μmol/l)	58.20 ± 2.10	58.60 ± 2.15	NS
Uric acid(μmol/l)	250.00 ± 3.75	520.00 ± 5.20	S
CRP (mg/L)	2.70 ± 0.22	10.20 ± 1.21	S
FBS (mmol/L)	4.00± 0.43	9.20±0.89	S

KEYS:
S represents statistically significant
n represents the number of subjects
NS represents not significant
ALT represents alanine aminotransferase
AST represents aspartate aminotransferase
ALP represents alkaline phosphatase
Total Bil represents total bilirubin
CRP represents C-reactive proteins
FBS represents fasting blood sugar

Table 5: Blood haematological parameters in chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) compared with non consumers of ogogoro (control group)

Parameters measured	Control (n=25)	Chronic consumers (n=25)	Remark
Hb (%)	12.0 ± 0.27	7.0 ± 0.18	S
ESR (mm/hour)	4.0 ± 1.02	4.1 ± 1.04	NS
Total WBC (cmm)	10, 000 ± 3.75	3,500 ± 1.86	S
RBC (cmm)	5,500 ± 1.70	2,900 ± 0.86	S

Keys:
Ns Represents Not Statistically Significant
S Represents Statistically Significant
N Represents The Number Of Subjects
Hb Represents Haemoglobin
Esr Represents Erythrocytes Sedimentation Rate,
Wbc Represents White Blood Cell
Rbc Represents Red Blood Cell.

Table 6: Percentage of chronic consumers of ≥50cl of ogogoro (local gin) in divided dose/day for a period of ≥6months (experimental group two) and non consumers of ogogoro (control group) with abnormal values compared with the existing reference range of the measured biochemical and haematological parameters

Parameters	Reference Range	Control Group (n=25)	Experimental Group(n=25)
ALT	Upto 12.0 U/l	0 (0)	* 80 (20)
AST	Upto 12.0 U/l	0 (0)	* 60 (15)
ALP	9-35 IU/L	0 (0)	* 52 (13)
T.BIL	Upto 17.0 μmol/L	0 (0)	* 56 (14)
Urea	1.7-9.1mmol/L	0 (0)	* 12 (3)
Creatinine	53-97μmol/L	0 (0)	* 8 (2)
Uric acid	142-416 μmol/L	0 (0)	* 60 (15)
CRP	≤6.0 mg/L	0 (0)	* 60 (15)
FBS	4.2-6.4 mmol/L	0 (0)	*72 (18)
Haemoglobin	12-15 g/dL	0 (0)	** 64 (16)
ESR	3-7 mm	0 (0)	* 24 (6)
WBC	4.0-11×10^3 cmm	0 (0)	** 60 (15)
RBC	4-6 ×10^3 cmm	0 (0)	** 64 (16)

Number of subjects is in parenthesis while values are in percentage
***=Percentage elevation than the existing maximum reference range for the measured biochemical and haematological parameters in the chronic consumers*
****=Percentage decrease below the existing minimum reference range for the measured haematological parameters in the chronic consumers*

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Mite Fauna Investigation Followed by Scientifically Reducing House Dust Mite Less than 50/M^2 per 20 Seconds of Aspiration Can Cure Severe Intractable Atopic Dermatitis for Years to Come

By Hideo Nakayama M.D., Akiko Kumei M.D., KoRon Chen M.D.
& Masatoshi Takaoka, PhD.

Abstract- There is enough accumulated evidence to conclude that house dust mites (HDM) are the most significant causes of atopic dermatitis (AD). HDMs are known to increase serum IgE and RAST scores for Dps and Dfs, and will often show positive results among AD patients when a patch test using three crushed HDMs or a petrolatum-base test using many HDMs is performed.

However, HDMs are invisible to the naked eye as they measure less than 0.3 mm, and therefore even when thousands of HDMs are present in the interior of the patients' homes, they live quietly without causing any noise, and therefore their presence cannot be detected by the patients.

The newly developed Methylene Blue Agar method (MBA) can reveal how many HDMs are present in each household furniture.

Keywords: atopic dermatitis, house dust mite (HDM), mite allergy, mite fauna, α-acaridial.

GJMR-K Classification: NLMC Code: 370199p

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Abstract- There is enough accumulated evidence to conclude that house dust mites (HDM) are the most significant causes of atopic dermatitis (AD). HDMs are known to increase serum IgE and RAST scores for Dps and Dfs, and will often show positive results among AD patients when a patch test using three crushed HDMs or a petrolatum-base test using many HDMs is performed.

However, HDMs are invisible to the naked eye as they measure less than 0.3 mm, and therefore even when thousands of HDMs are present in the interior of the patients' homes, they live quietly without causing any noise, and therefore their presence cannot be detected by the patients.

The newly developed Methylene Blue Agar method (MBA) can reveal how many HDMs are present in each household furniture, and through this method, they can be reduced to less than 50/m^2 per 20seconds aspiration for all furniture and mattresses, dramatically improving severe symptoms of AD for patients who have even suffered for more than ten years.

Therefore, it is critical that the mite fauna of the patients' home is examined so that effective measures can be taken to cure the patient. Furthermore, AD is considered as a unique form of allergic contact dermatitis due to the fact that HDMs involve both type I and type IV allergies. Please note that there are also rare cases of AD which are caused by reactions towards metals and the malassezia group fungi.

Keywords: atopic dermatitis, house dust mite (HDM), mite allergy, mite fauna, α-acaridial.

I. Introduction

Atopic dermatitis (AD) is a commonly seen itchy recurrent dermatitis, present in many countries throughout the world. When the symptoms of an AD patient are so severe and generalized, in many cases it is intractable due to the fact that the true causations have been unknown to the patient. What is the best method of treatments for such severe cases? Is it the temporal improvement often provided by hospitals and clinics that consist of topical or systemic usage of corticosteroid hormones and perorally administered antihistamines that quickly lose effect once the treatment is stopped? The answer is NO.

What patients with intractable severe AD want are skin conditions without erγthema, papules, prurigoes, xerosis and itching, so that they no longer need to keep scratching themselves. Is it possible to provide such an ideal effective treatment? The answer is YES. This article will show you just how such a treatment is possible. Even though this fact has been known for more than 20 years [1,2,3], this information has not been spread widely enough partly due to the fact that institutes have only investigated the mite fauna among AD patients' houses in Tokyo and Chiba prefecture, and also the fact that the mite-free mattresses that the patients sleep in to effectively avoid contact of house dust mites (HDM) have only been sold in Japan.

Therefore, the authors wish to enlighten dermatologists who have had failed attempts at treating severe intractable cases of generalized AD through this article. We will show you 8 typical cases of AD patients who were all hypersensitive to HDM and had high values of serum IgE and RAST, and just how they were able to successfully be cured of severe eczema and prurigo on the skin (Fig. 1-8) through the remarkable effects of eliminating HDM to less than 50/m^2 per 20 seconds aspiration by a 320W vacuum cleaner and maintaining a clean environment.

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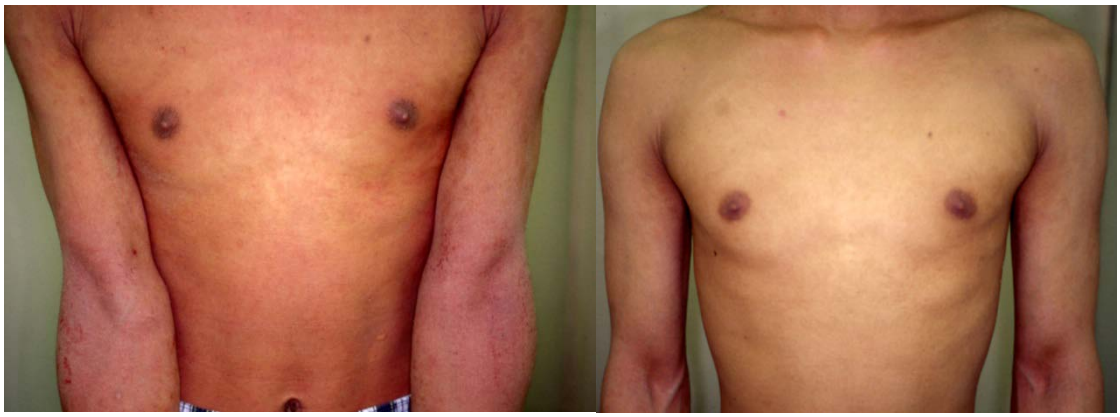
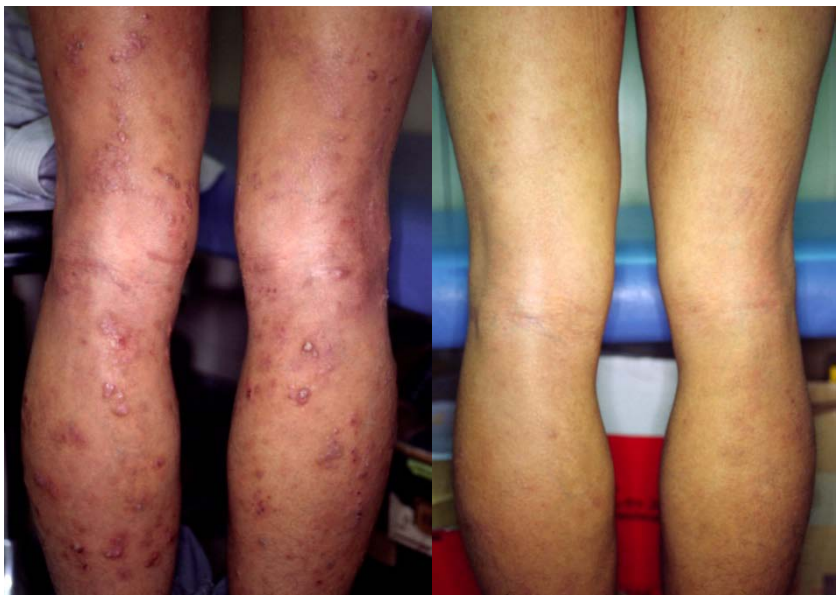


1a 1b

Fig. 1: (Color)

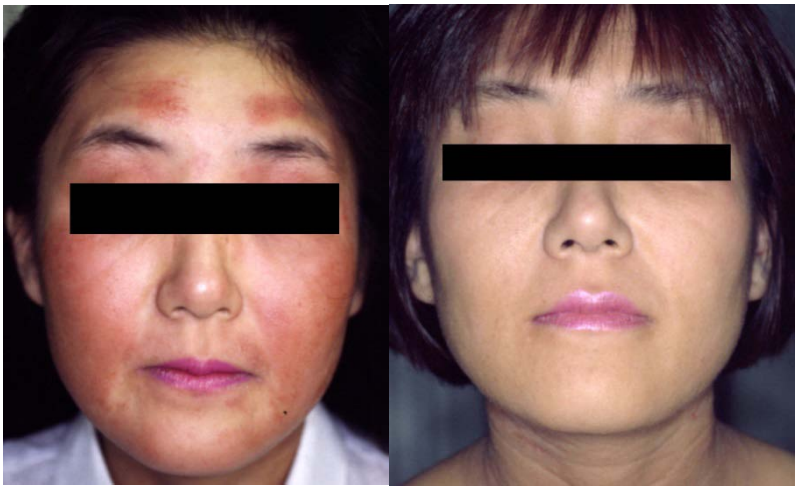
1a: 22-year-old man suffering from severe atopic dermatitis since childhood before receiving mite elimination.
1b: He was able to maintain a cured state for 4 months by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.



2a 2b

Fig. 2: (Color)

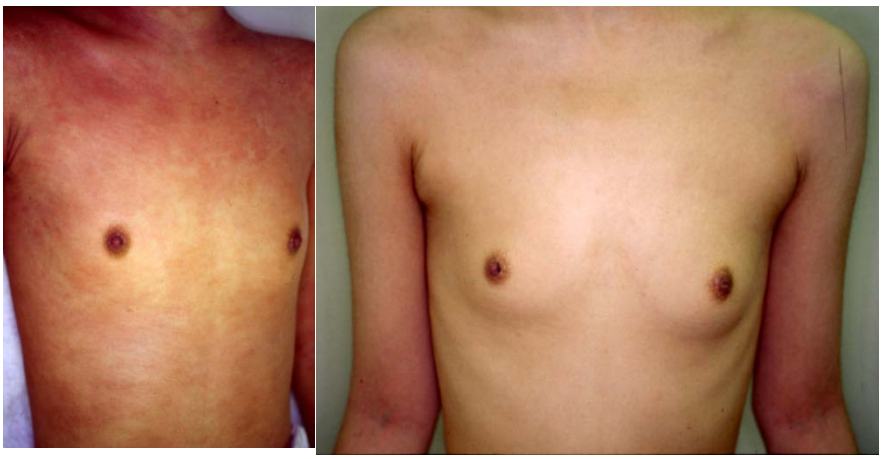
2a: 29-year-old man suffering from severe atopic dermatitis since childhood before receiving mite elimination.
2b: He was able to maintain a cured state for 3 years by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.



3a 3b

Fig. 3: (Color)

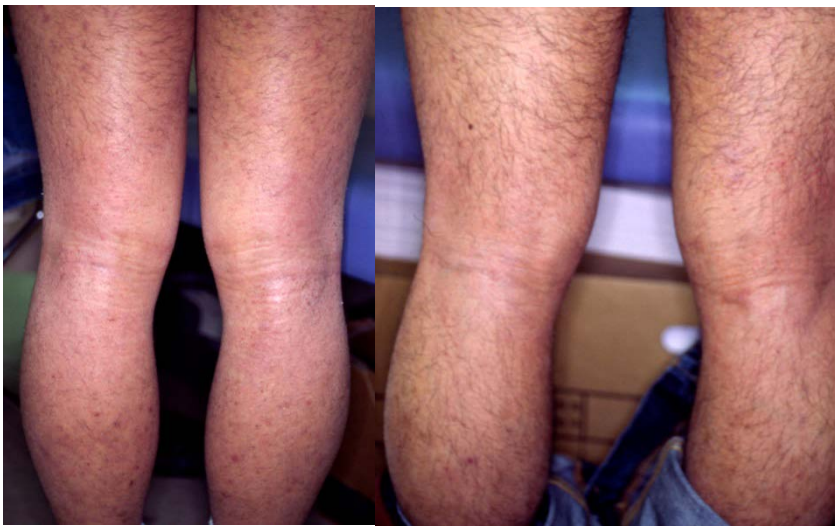
3a: Face of a 27-year-old woman suffering from severe atopic dermatitis before receiving mite elimination.
3b: She was able to maintain a cured state for 2 years and 11 months by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.



4a 4b

Fig.4: (Color)

4a: 23-year-old woman suffering from severe atopic dermatitis for more than 10 years before receiving mite elimination.
4b: She was able to maintain a cured state for 5 months by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.



5a 5b

Fig. 5: (Color)

5a: 18-year-old man suffering from severe atopic dermatitis since 3 years before receiving mite elimination.
5b: He was able to maintain a cured state for a year and a half by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.

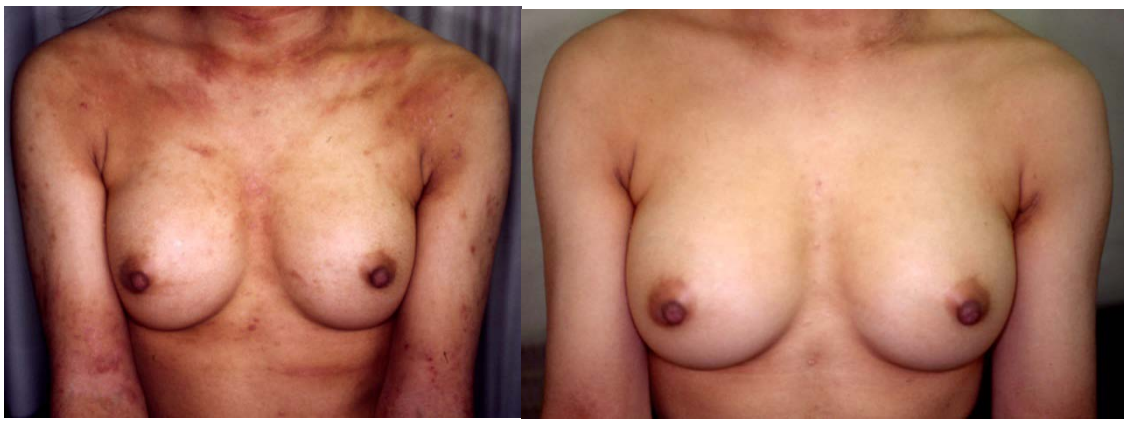
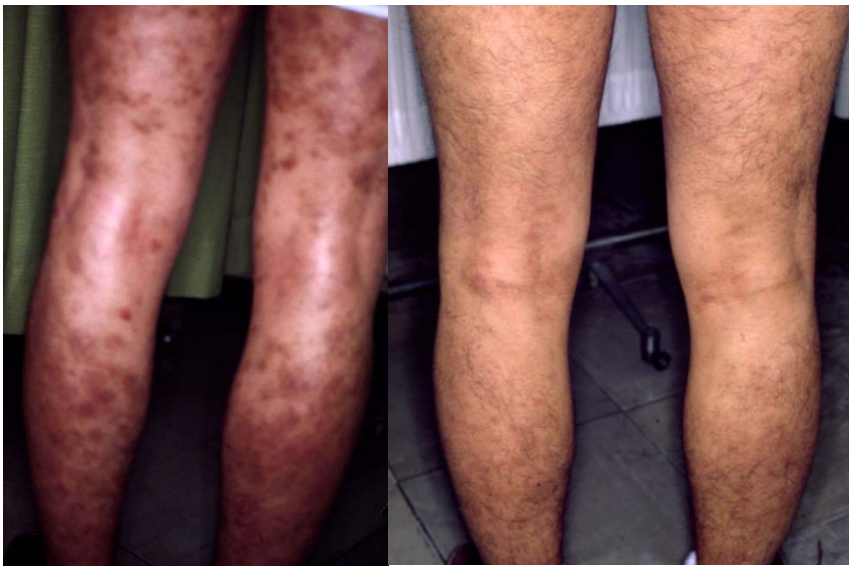


Fig. 6: (Color)

6a: 19-year-old woman suffering from severe atopic dermatitis since 5 years before receiving mite elimination.
6b:She was able to maintain a cured state for a year and 4 months by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.



7a 7b

Fig. 7: (Color)

7a: 28-year-old man suffering from severe atopic dermatitis for more than 10 years before receiving mite elimination.
7b: He was able to maintain a cured state for a year and 10 months by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.

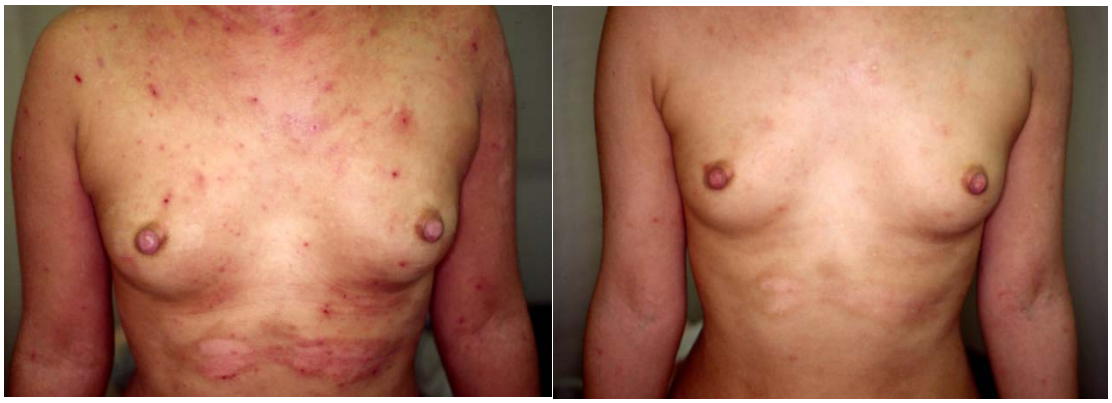


Fig. 8: (Color)

8a: 20-year-old woman suffering from severe atopic dermatitis for many years before receiving mite elimination.
8b: She was able to maintain a cured state for 3 months by reducing the number of mites in all household furniture to less than 50/m^2 per 20 seconds of aspiration.

These cured patients were delighted and thankful for having been able to eliminate the mites in their home environment through a scientific mite fauna investigation and being able to maintain their cured states. Allow us to introduce the remarkable effects and then explain to you the mechanism behind the treatment.

II. A Brief History of Atopic Dermatitis (AD) and How House Dust Mite Allergy Among Atopic Diseases was Discovered

a) The long history of AD

The history of AD goes back as far as when human beings first set up countries all across the world. The first description of AD is said to have been the first Roman Emperor Augustus (BC 63 - AD 14) who frequently scratched his skin due to eruptions which were accompanied by coughs and a runny nose [4]. Due to this unique trias, he is suspected as being the first AD patient in history. Augustus was an important successor of the famous Julius Caesar, but due to this disease, he was not as mighty as Caesar and ended up getting severely wounded after losing two battles. However, as Augustus excelled in politics, Caesar ordered him to concentrate in politics while military matters were succeeded to the young Agrippa. This division of work was successful in having established the new Roman Empire which would remain for almost 300 years (PaxRomana) [5].The etymology of the term "eczema" comes from the Latin word "eczeo" which refers to something that is coming out from the skin.

In China, the same disease appeared in a medical textbook as the "wet eruption" in AD 610 [6]. Later it would be called "Nai-cheng" in 1617 by Chen Sa Kong who named it to mean "an eruption due to the mother's milk" [7]. It was apparently differentiated from ordinary allergic contact dermatitis ("Pi-Fu-Yeng" in Chinese) because the swelling symptoms and the affected locations differed from "Nai-cheng". As in the case of Fig. 9 when the same type of dermatitis was found on both the mother and baby's cheeks, the causation was attributed to the mother's milk or the disease was suspected as being hereditary.

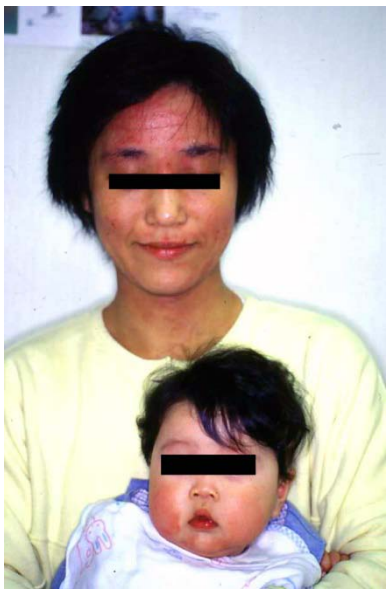


Fig. 9 :(Color)

The presence of such cases, a 6 months old baby produced similar itchy eczema as her mother had on the face, suggested the causation was attributed to mother's milk, or the disease was suspected as hereditary.

In 1923, Coca conceived the new medical term "Atopy" to imply human hereditary allergic diseases including eczema, bronchial asthma and hay fever. Dr. Marion Sulzberger once told the author in person that it was back in 1928 when he conceived to create the new term "atopic dermatitis" by introducing the adjective "atopic" for the first time. Prior to Sulzberger, AD had been referred to as "Asthma-eczema (Jadassohn)", "Endogenes Ekzem (Korting)", and "Constitutional prurigo-eczema (Bonnevie)" because the true mechanism had not yet been known. The term AD would only start to prevail after World War II in the 1950s. Dr. Marion Sulzberger also invented hydrocortisone ointment for the first time in the world. Many types of corticosteroid ointment followed and they were successful in temporarily improving severe eczema of AD but unable to prevent the relapse or generalization of these conditions.

b) The gradual discovery of the mechanisms of AD

In 1966, Ishizaka and his wife investigated atopic regain among serum in Denver and discovered the new immunoglobulin "IgE" for the first time in the world [8]. As they knew that atopic reagin is abundantly contained in the serum of chronic flexor eczema patients, which in Japanese is "Kusa", and that this disease was surely typical AD, the "E" in IgE might have from "eczema" but this was not ascertained by the authors when they met Dr. Ishizaka.

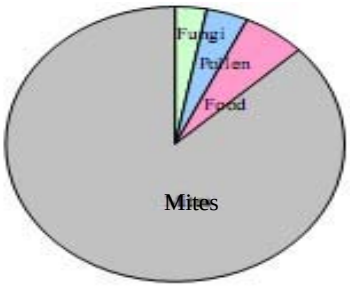
In 1970, Gunner et al reported that serum IgE specifically increased in the serum of AD patients [9]. The introduction of radio isotope soon clarified that the causative allergens raised serum IgE, but measuring specific IgE with more than 17.5 UA (Unit of allergy) of serum had been restricted for almost 20 years to avoid the excess exposure to isotopes for the employees in the laboratory. Therefore, patients with AD whose specific IgE by radio-allergo-sorbent-test (RAST) was as high as 500 UA to 2,000 UA to dermatophagoides were officially reported as being>17.5 UA. Later it was improved to >100 UA, but the true high values of UA had not been reported till 1989.

In 1989 a national project to find out the real causation and a truly effective treatment of AD began and it was executed by two medical schools and one educational hospital in Japan. To meet this specification, SRL the biggest medical laboratory in Tokyo was requested to dilute serum ten times when the RAST results were to be reported as >17.5 UA. When the results of 10 times dilution showed 14 UA, the real specific IgE was 140 UA, and when this dilution again showed >17.5 UA, dilution was performed 10 more times. If the result showed the value of 13 UA, the real specific IgE was considered as 1,300 UA, showing just how the method of original value>17.5 UA was wrong. This dilution technique was similar to those used for ANA, syphilis and viral antibody titers, which normally showed very high antibody titers in the serum. By this method, the true antibody titers of serum IgE were reported to hospitals for the first time. Later this dilution technique was generally adopted by other laboratories in Japan as well. The results of serum dilution was really amazing: as is shown in the table 1 and Fig. 10, the RAST UA values of Dermatophagoides pteronyssinus (Dp) and Dermatophagoides farinae (Df) were extraordinarily high, compared to many other allergens such as fungi, food, bacteria and pollens.

Table 1: Serum IgE levels of four allergic diseases, demonstrating that atopic dermatitis shows remarkably high levels of IgE compared to other atopic diseases without eczema [1]

	Diseases	n (M, F)	IgE (IU/ml) mean	IgE (IU/ml) SD	Age mean	Age SD
1	Atopic dermatitis	83 (24,59)	2,947.3	5,404.5	23.9	8.3
2	Bronchial asthma	18 (3,15)	336.5	439.8	43.1	22.6
3	Allergic rhinitis	53 (11,42)	323.8	617.1	42.5	17.1
4	Urticaria	54 (20,34)	350.9	678.4	45.5	19.3

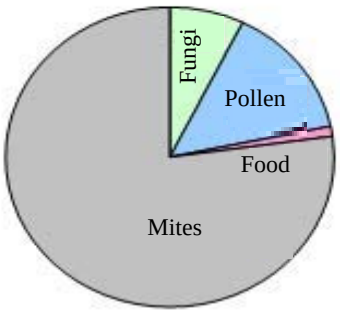
Allergens	UA	%
Dermatophagoides pteronyssinus	127	87.0
Fungi (3 types)	5	3.4
Japanese cedar pollen	6	4.1
Food (10 types)	8	5.5
Total	146	100.0



n=42 (17 males and 25 females)
Average age : 23.5 years old
Average serum IgE level : 4,643 IU/ml

In 1991, the serum dilution method was performed on 42 adult AD patients in order to investigate the responsible allergens for serum IgE elevation.

Allergens	UA	%
Dermatophagoides pteronyssinus	340	77.2
Fungi (3 types)	32	7.3
Japanese cedar pollen	63	14.4
Food (10 types)	5	1.1
Total	440	100.0



n=42 (28 males and 14 females)
Average age : 29.8 years old
Average serum IgE level : 6,751 IU/ml

In 2006, the serum dilution method was performed on 42 adult AD patients in order to investigate the responsible allergens for serum IgE elevation.

Fig. 10: (Color)

The rate of causative allergens was calculated using the UA values of RAST among 42 severe cases of atopic dermatitis. 1a is the result obtained in 1991, showing that in average, 87.0% of elevated serum IgE can be attributed to Dermatophagoides. 1b is the result obtained in 2006 among the same number of similar severe cases of atopic dermatitis, showing that in average, 77.2% can also be attributed to Dermatophagoides. Note the increase in the rate of cedar pollens on the production of IgE in 2006, and yet, the responsibility of Dermatophagoides is still very high in the elevated serum IgE with 42 severe atopic dermatitis patients [1].

Such phenomenon were reported for the first time by Okudaira et al in 1983 [17] and 1989 [18], and confirmed by the national research team in 1991 [1] and by Nakayama Dermatology Clinic in Tokyo in 2006 [1]. These already reported tables and figures are again demonstrated to emphasize the importance of them. These results clearly showed that with AD, usually the serum IgE levels were remarkably higher than of other atopic diseases without eczema, and the presence of moderate or severe eczema of AD was highly associated with the rise of serum IgE [1, 2].

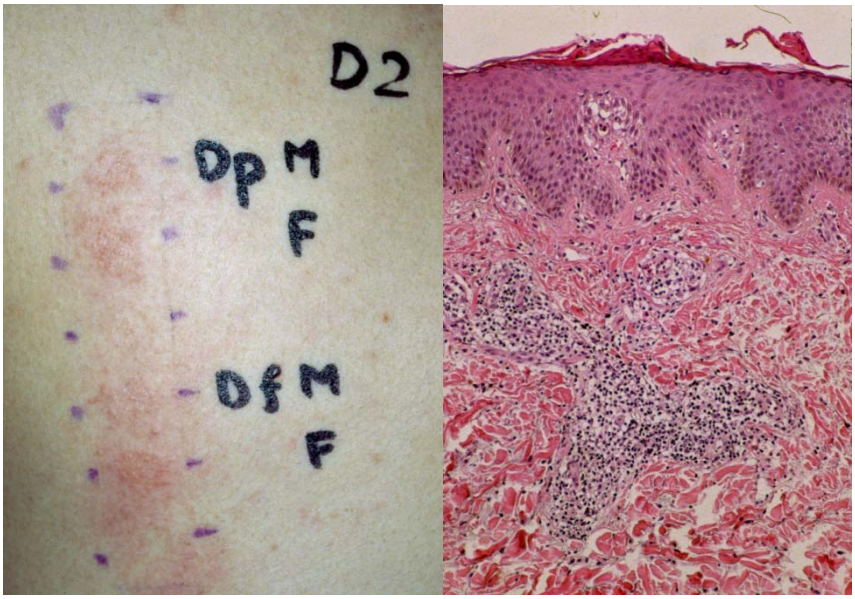
For many years, serum IgE had been recognized as a mediator to provoke only type I allergic reactions like allergic rhinitis, bronchial asthma, urticaria and anaphylactic shock. However, in 1986, Bruynzeel Koomen made a great discovery that IgE molecules were present on epidermal Langerhans cells to provoke eczema when causative atopic allergens come into contact from the skin surface [12]. Novak et al confirmed this fact in 2004 and through these discoveries, the link between serum IgE and production of eczema was found [13].

As for the most important causative allergen that produces various atopic diseases, in 1969 Voorhorst et al, also made a great discovery that a type of house dust mite (HDM) called dermatophagoides pteronyssinus (Dp) was responsible in provoking atopic asthma in the Netherlands [14]. They observed that patients with intractable asthma in and around Amsterdam were free of asthma attacks while they stayed in Pyrenees during their summer vacation, and that the asthma came back when they came down from the mountains to hot and humid plains of the lower altitude areas. They examined the house dusts in the plain and in the mountain to discover that there were abundant Dps in the homes in the plain and instead Dps were rare among the houses in the mountain. They made intracutaneous tests of Dps, which were found to be positive among asthma patients. This knowledge gradually prevailed to have shown that HDMs were an important allergen in the houses for the production of atopic asthma.

In1984, Rawle et al reported for the first time that the P1 antigen of Dps produced a specific positive reaction by the lymphocytes of AD and AD + asthma patients. IgE did not have any relation to this phenomenon. Those lymphocytes of allergic rhinit is and control persons did not react to P1 antigen of Dps [15]. This was the first report of type IV allergy to HDM among AD patients. To ascertain type IV allergy to HDM in AD, a section of the national research team of AD conceived patch testing's of cultured and crushed live Dps and Dfs placed on slightly convex plastic discs of 8 mm in diameter. It was a device to surely contact fine mite components to the skin for two days as a patch test. The reactions were read on days 2,3 and 7 by ICDRG standards. This test clarified that 12 out of 48 AD patients showed erythema, edema, papules and later eczematiation at the location of the patch test of 3 crushed live mites, a typical type IV positive reaction of allergy. The histopathology of positive patch test reactions to crushed live HDM was spongiosis of the epidermis with infiltration of lymphocytes as ordinary allergic contact dermatitis (Fig. 11). When immunological factors of the inflammation were compared with the original eczema of AD, they were almost identical as is shown in table 2, demonstrating that the eczema of AD and crushed mite allergic patch test reactions were quite similar. It meant that the eczema of AD seemed to be surely produced by the contact of crushed live dermatophagoides. Only 1 crushed mite and crushed dead mites produced negative reactions in all cases [3]. These results showed that type IV allergy, or in another term, contact hypersensitivity to HDM, were surely present among AD patients. Also, when serum IgE level was low and the RAST scores were 0 UA towards common allergens of AD, such cases had been regarded as AD due to intrinsic factors for many years. This is apparently erroneous when patch tests show positive to HDM cases of AD are really present. Imayama et al, a team of national researchers on AD reported that the combination of IgE RAST and patch testing of HDM could be classified for 130 AD patients into four groups: Type I + IV 32 (24.6%), Type I only 42 (32.3%), Type IV only 19 (14.6%),and no allergy to HDM 37 (28.5%) [16]. This was a report that among 130 AD patients, 93 cases (71.5%) were surely allergy to HDM of type I, IV or the both.

Table 2: Results of immunochemical staining of the skin lesions of AD patients and positive mite reactions of the patch tests

	CD4: Helper / Induce T-cell	CD8: Suppressor / cytotoxic T-cell	CD1a: Langerhan s cell	ICAM 1	HLA-DR	CD23: Fc ε R2
Eczematous skin lesions of AD patients	11/15 (73.3)	0/15 (0)	8/15 (53.3)	9/16 (56.3)	13/16 (81.3)	1/4 (25.0)
Positive reactions of patch test to Dps or Dfs	13/14 (92.9)	1/14 (7.1)	9/14 (64.3)	13/15 (86.7)	14/14 (100)	2/5 (40.0)



11a 11b

Fig. 11: (Color)

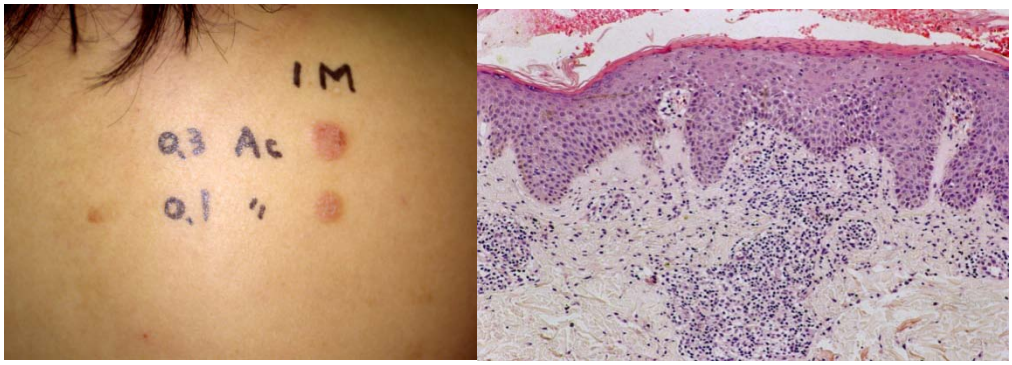
11a: Patch tests of crushed live mites were negative on controls, but showed clear positive eczematous reactions among AD patients, and even on baby AD patients whose serum IgE was normal and the RAST to HDM was negative.

11b: Histopathology of such positive reactions on adult AD patients showed spongiosis and lymphocytic infiltration in the dermis as ordinary allergic contact dermatitis.

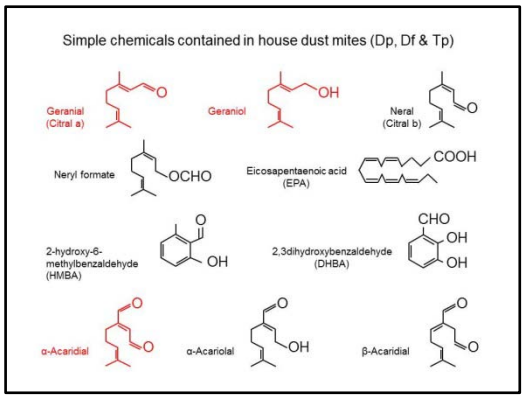
Today, such patch testings to find out type IV allergy to HDM is possible by using a Dermatophagoides mix patch test allergen sold by Chemo technique® in Sweden. It was developed by Italian investigators putting a number of Dps and Dfs in petrolatum [17, 18]. One small portion of it should be put on a Finn Chamber to be applied on the back of the patient, and the reactions are examined on days 2, 3 (or 4) and 7 (or 6), as typical allergic positive reactions are frequently seen as late as 3 -7 days. The mistake of diagnosing "intrinsic AD" which occurs without performing mite patch tests can be avoided through this procedure.

Normally, eczematous allergic type IV reactions occur by the contact of allergens having molecules less than 500 KD, like metal ions, hair dyes, fragrances, urushiol, formaldehyde, rubber vulcanizers, woolalcohol etc. Therefore, it was suspected that some chemicals having molecules less than 500 KD must be present in HDM to provoke strong type IV reactions of AD. The procedure of finding out such low molecule contact allergens in HDMs were performed by two groups at the same time.

Sakurai et al [19] collected cultured Dps and Dfs on saturated saline water, crushed and extracted terpens in the HDM by Folch solution, examined by gas chromatography and mass spectrometry. Kuwahara et al cultured HDMs, picked up 40 live mites, put them in hexane and examined them in the same method [20, 21]. Both investigations agreed to have found out that the richest terpens in Dps and Dfs were geraniol and geranial. Furether more, Kuwahara's group discovered α-acaridial from Tyrophagusptrescentiae (Tp) through the same method. The chemical structures of these terpens along with the patch test positive reactions to them are shown in Fig. 12. Geraniol among such terpens have been known as a common cosmetic sensitizer [23, 24], and the concentrations of geraniol and geranial are insufficient to provoke eczematous reactions from HDM. However, in rare cases, there are inactive AD patients who had not cleaned their room and mattresses for several months. In such cases the amount of terpens in the room may reach high enough to provoke eczema if they already had such allergens due to cosmetics or toiletries.



12a 12b



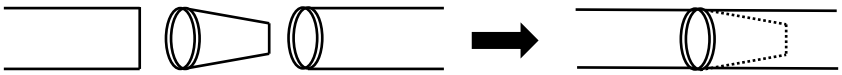
12c

Fig. 12: (Color)

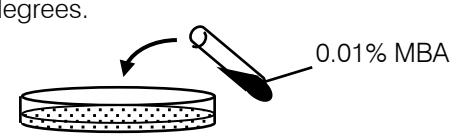
The allergenicity of simple chemicals found in house dust mites detected by patch tests.

The α-acaridial contained in Tp is a primary sensitizer and produced erythema with infiltration for more than a month (12a)and 6 months at the longest when it was patch tested at 0.1% - 0.5% in petrolatum. The histopathology of such long term positive patch test reactions were acanthosis and infiltration in the upper dermis, suggesting thatα-acaridial is a causative allergen of Prurigo Besinier of AD. Among 10 terpens contained in HDM, α-acaridial is the only strong contact sensitizer (12c). The reason why prurigo is formed when α-acaridial comes into contact is because it cannot be destroyed or eliminated in the dermis to maintain a long term positive allergic reaction. This is much like the case of persistent light reaction due to halogenated salicylanilides.

Visit an AD patient's home with an electric vacuum cleaner (320 W). We recommend driving there with a car instead of using public transport.



1. Insert a small non-woven fabric bag between the tubes to collect HD.
2. Aspirate HD from 1 m^2 for 20 seconds. (1m^2 is indicated by a 4m long circular string in the form of a square with 1 m an each side.)
3. Collect HD from 10 – 15 places and medicate each fabric bag with a number.
4. After returning the laboratory, measure the weight of each HD in the bags.
5. Measure 50 mg of HD, put it on a petri dish of 9 cm in diameter. (This kind of petri dish is usually used to culture bacteria in hospitals.)
6. Add 1ml of 0.1% neutral detergent to detach mites from the fragments of house dust.
7. Pour 0.01% methylene blue containing 4ml agar into the petridish after liquidizing it with water at 60 degrees.
8. Pour 0.01% methylene blue containing 4ml agar into the petridish after liquidizing it with water at 60 degrees.



Leave it at room temperature until solid

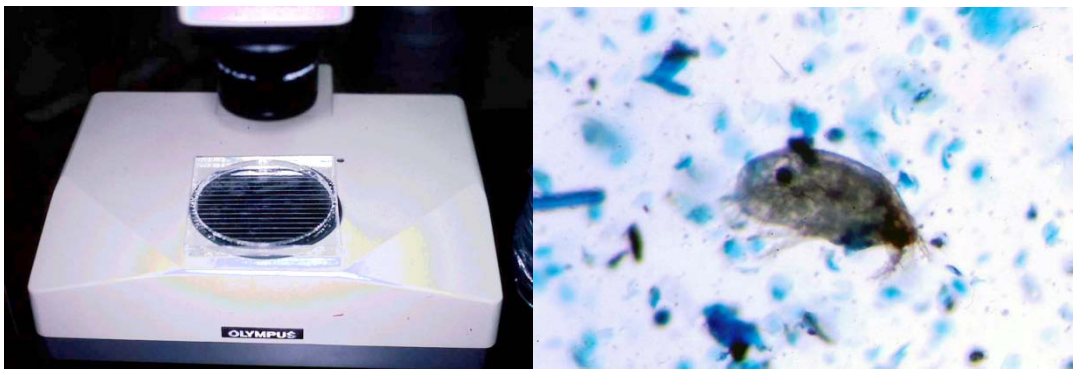
1. Place a petridish containing MBA under a microscope with a plastic plate with fine parallel lines beneath.
2. Start counting.

On the other hand, α-acaridial turned out to be a primary sensitizer and it proved that it could produce prurigo for months when a patch test was conducted with concentrations of 0.2% - 0.5%. This is the reason why its commercial distribution as a patch test allergen

was refrained, because its distribution was suspect to creating many other new AD patients in the world. However, it should be noted that Tp, a HDM, has such a strong contact sensitizer [1].

III. For Accurate Reduction of Hdm in the Homes of Severe Ad Patients, Conduct Mite Fauna Investigation with the Mba Method

For many years, counting the accurate number of HDM in each AD patients' homes had been impossible, because there had not been an excellent practical method. When three national research teams started to investigated the causation and treatment of intractable AD in 1989, one team developed a practical method of counting the number of mites in every furniture of the patients' homes. This new method, known as the Methylene Blue Agar (MBA) method was easier than the previous methods adopted in acarology. It is shown in Fig. 13, and soon the first laboratory to investigate mite fauna was established in Chiba Prefecture near Tokyo. As HDMs are macroscopically invisible, the invention brought a remarkable progress to evaluate the furniture in the AD patients' homes based on the number of HDM among various locations.



Examination a Dp detected

Fig. 13: (Color)

Methylene blue agar (MBA) method to investigate mite fauna

According to the results of crushed live HDM on plastic discs, three or more mites could produce a positive patch test and eczematous reactions. One crushed mite, however, produced no positive reaction at all with the AD patients. When the mite numbers were less than 50/m^2 per 20 seconds aspiration, it meant the mite number was 1 or 0 in a 10×10 cm area. Therefore, after the mite fauna investigation was conducted, and the patients as well as the doctors were informed of the mite numbers at various locations, the environmental improvement to reduce mite numbers to less than 50 in all places of the home was recommended.

Carpets and tatami, a traditional Japanese straw mat, turned out to be an eminent medium to keep HDM abundant throughout all seasons, therefore, all of them were advised to be remove, and be replaced with flooring. In cold areas floor heating was recommended to be introduced. Fortunately, the mite-free-sleeping mats had been available at that time, which used high-density cloth produced by Teijin Company through fine woven fibers in which no mite could penetrate into the mat (Fig. 14). All of the intractable AD patients who were hypersensitive to HDM either by type I or IV allergy, were requested to purchase this mite-free-mat, so that they could pass 7 or 8 hours of the night with no contact to HDM at all.

14a 14b 14c

Fig. 14: (Color)

Mite free sleeping mats (14a) are fully protected on the surface by a textile that has no holes for HDMs to enter. This mite-free condition has been realized finally for the first time. Note that ordinary cloths are full of small holes that make it easy for HDMs (0.3mm) to pass through (14b), but Teijin Co.'s mite-free matt covered with high-density cloth is able to prevent the intrusion of HDMs (14c).

15a 15b

15c

Fig. 15: (Color)

A sample of a report on mite fauna investigation, indicating mite rich furniture in red ink (15a). Using this report, the patient's home condition (15b) was improved to decrease mite numbers to less than 50/m² per 20 seconds aspiration, including the removal of carpets, flooring and the introduction of mite-free-sleeping mats (15c). All the cases in Fig. 1 – 8 had this allergen control treatment to regain normal healthy skin conditions.

Furry chairs and sofas were requested to have the surface replaced with smooth textile which would not allow too much HDM to accumulate. Cleaning the room using a vacuum cleaner once a week was also recommended. Statistics of mite fauna among the number of severe AD patients always showed that 90% of HDM examined were Dps and Dfs, and one example of the study in 1996 is demonstrated in table 3 as well as the distribution of mites in table 4. This ratio has remained basically the same in this century as well [1].

Table 3: Mite species detected from the homes of 140 severe atopic dermatitis patients (MBA Mite Research Laboratory, 1996).

No.	Species	Number	%
1	Dermatophagoides (Dp+Df)	137,348	88.9
2	Tarsonemusae	1,91	1.3
3	Haplochthonius	4,216	2.7
4	Cheyletus	1,151	0.8
5	Others	2,534	1.6
6	Fragments	1,030	0.7
7	Eggs	6,255	4.0
Total		154,465	100.0

The rate of Dermatophagoides (Dp+Df) among HDMs showed between 88% - 93% according to the statistics obtained from 1991 to 2015, showing approximately 90% of HDM had always been Dermatophagoides group. The excellent effect of mite elimination on AD is easy to understand as it means actually the elimination of Dermatophagoides to which severe AD patient are hypersensitive.

Table 4: Average numbers of mites among various furniture in the AD patients' homes during all four seasons in 1993 and 1996. [25]

The number of patients surveyed: 484

(Total number of mites *1 /m² per 20 seconds vacuum aspiration with 320W electric cleaner)

Interior \ Season		Spring *2	Summer *3	Autumn *4	Winter *5	Total *6
1	Carpet (including mat)	144.0 (187)	301.3 (194)	133.3 (122)	98.6 (181)	174.7 (684)
2	Tatami mat (Japanese straw mat)	46.8 (106)	93.4 (153)	53.8 (115)	56.3 (105)	65.4 (479)
3	Flooring	11.5 (102)	55.0 (167)	16.4 (101)	22.5 (112)	30.1 (482)
4	Mattress	17.7 (188)	52.5 (208)	87.1 (163)	42.3 (186)	48.7 (745)
5	Blanket (including towelket)	21.3 (62)	95.5 (97)	112.0 (67)	20.6 (137)	57.6 (363)
6	Floor under tatami mat	236.2 (9)	318.0 (15)	1,289.5 (13)	268.2 (7)	964.4 (44)
7	Mattress of bed	79.5 (40)	98.9 (30)	261.0 (28)	55.2 (34)	116.1 (132)
8	Pillow	4.4 (68)	9.6 (91)	16.1 (63)	9.9 (65)	9.9 (287)
9	Japanese seat cushion	34.0 (21)	41.4 (23)	60.2 (38)	53.9 (19)	49.3 (101)
10	Sofa	219.3 (40)	527.3 (56)	193.2 (40)	798.0 (43)	448.8 (179)
11	Chair	108.3 (23)	377.0 (43)	285.5 (48)	439.3 (28)	314.8 (142)
12	Mite-proof mattress	4.1 (23)	18.8 (50)	7.6 (45)	6.9 (36)	10.5(154)
13	Mite-proof tatami	7.5 (2)	7.3 (4)	13.7 (7)	5.0 (4)	9.4 (17)
14	Mite-proof pillow	0.7 (7)	2.4 (7)	2.3 (12)	0.4 (5)	1.7 (31)
15	Others (ex. Drawer, Closet, etc.)	29.4 (70)	31.2 (116)	28.9 (112)	37.8 (95)	31.8 (393)

*1 Counted by the MBA method, except for in the case of insects, the egg and mite shell were counted as one. The figure in ( ) is a sample.

*2 March - May *3June - August *4September - November *5December– February

*3 January - December

IV. The Results of Mite Reduction Based on Mite fauna Investigation

House dust mites are invisible and even though hundreds or thousands of them swarm in furniture, they make no noise, and therefore their presence are not recognized by the inhabitants who suffer from years of severe, generalized itchy eczema. The recognition that HDMs are the critical main causation of severe, intractable AD patients, has been proven by the accumulated evidence from years of research [1, 2]. These patients long for a real cure like the AD cases presented in Fig. 1 to 8 of this article. Such a cure is surely possible if the patients are examined with serum IgE level, RAST on Dp, Df, Tp and other allergens related to AD, a patch test using HDM and other common contact sensitizers related to contact dermatitis. When the patients turn out to be hypersensitive to HDM, mite fauna should be investigated by visiting the patients' homes and investigating the mite number of each furniture.

Environmental improvement should be recommended in order to reduce mite numbers in all areas of the home to less than 50/m² per 20 seconds aspiration because it is a lower threshold that does not provoke eczematous or prurigo-type skin reactions.

When a national research team investigated in 1995, 15 out of 17 severe AD cases (88%) recovered and kept well improved conditions in the same season for one of two years after, as they could execute the above mentioned reduction of HDMs (complete group). On the other hand only, 6 out of another 17 similar AD cases (35%) were still able to recover even when some mite rich furniture were kept as before (incomplete group). This was a double-blind test, and there was a significant statistical difference between the complete group and incomplete group when examined by the Wilcoxon test [1, 2, and 25].

In following years, Tan performed similar double blind tests by measuring the HDM population with antigen. The results were similar in which when the mite reduction was incomplete, the result of improvement also decreased [26]. After these DBT, a simple follow up of mite reduction on intractable severe AD have been made. Two reports were made on the effect of mite elimination with color photographs like Fig. 1 – 8 of this paper after mite-free mattresses had been used by the severe AD patients [27, 28]. Such mite free mattresses should be produced and distributed using high density textile (Microguard®) because pesticide is quite unnecessary in creating mite free conditions at night.

As doctors are always busy, a person who is informed of the address and map of the patient's home should make a visit after an appointment is made. A 320W vacuum cleaner with 10 – 20 non-woven fabric bags should be inserted between the tubes to collect

house dusts. One room in the laboratory or the hospital is enough to perform the MBA method mite fauna investigation, if petri dishes, water bath, MBA, stereotypical microscope and a plastic disc with parallel lines on it to avoid double count are all ready. In Japan the cost of mite fauna investigation is about 340 USD plus transportation fee. The report is delivered to the clinic two weeks after the visit.

V. Conclusion

Thus, dermatologists should be courageous enough to recommend a mite fauna investigation followed by mite reduction to less than 50/m^2 per 20 seconds aspiration in all areas of the AD patient's home, if they encounter a patient with generalized itchy eczema that could not be improved through anti symptomatic treatments. When mite reduction is incomplete, you cannot anticipate for good results. For this purpose, mite fauna investigation using MBA method and the production and distribution of mite-free mattress should be available in all countries where there are many AD patients. Without these, AD is considered to be incurable among many severe intractable cases. We should not consider that the causation of severe, intractable AD is unknown, and understand that AD is curable when the causation of mite allergy is detected either by IgE-RAST or patch testing using adermatophagoides mix.

Establishing a laboratory to perform MBA method investigation and the production and distribution of reliable mite-free mattresses using high density textile (Teijin) are certainly a barrier at present, but the barriers are not high, since they have been available in Japan for more than 20 years. Furthermore severe and intractable AD patients should be taught that HDMs, the invisible and silent creatures which share one's home, are most important causation of their recurrent itchy dermatoses. The investigation of mite fauna followed by scientific reduction to less than 50/m^2 per 20 seconds aspiration can cure the disease for many years.

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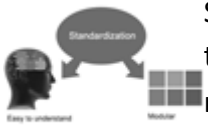

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The MARSM member can apply for approval, grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A.

Once you are designated as MARSM, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria.

It is mandatory to read all terms and conditions carefully.

AUXILIARY MEMBERSHIPS

Institutional Fellow of Open Association of Research Society (USA) - OARS (USA)

Global Journals Incorporation (USA) is accredited by Open Association of Research Society, U.S.A (OARS) and in turn, affiliates research institutions as "Institutional Fellow of Open Association of Research Society" (IFOARS).

The "FARSC" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., FARSC or William Walldroff, M.S., FARSC.

The IFOARS institution is entitled to form a Board comprised of one Chairperson and three to five board members preferably from different streams. The Board will be recognized as "Institutional Board of Open Association of Research Society"-(IBOARS).

The Institute will be entitled to following benefits:

The IBOARS can initially review research papers of their institute and recommend them to publish with respective journal of Global Journals. It can also review the papers of other institutions after obtaining our consent. The second review will be done by peer reviewer of Global Journals Incorporation (USA) The Board is at liberty to appoint a peer reviewer with the approval of chairperson after consulting us.

The author fees of such paper may be waived off up to 40%.

The Global Journals Incorporation (USA) at its discretion can also refer double blind peer reviewed paper at their end to the board for the verification and to get recommendation for final stage of acceptance of publication.

The IBOARS can organize symposium/seminar/conference in their country on behalf of Global Journals Incorporation (USA)-OARS (USA). The terms and conditions can be discussed separately.

The Board can also play vital role by exploring and giving valuable suggestions regarding the Standards of "Open Association of Research Society, U.S.A (OARS)" so that proper amendment can take place for the benefit of entire research community. We shall provide details of particular standard only on receipt of request from the Board.

The board members can also join us as Individual Fellow with 40% discount on total fees applicable to Individual Fellow. They will be entitled to avail all the benefits as declared. Please visit Individual Fellow-sub menu of GlobalJournals.org to have more relevant details.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time. This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

After nomination of your institution as "Institutional Fellow" and constantly functioning successfully for one year, we can consider giving recognition to your institute to function as Regional/Zonal office on our behalf.
The board can also take up the additional allied activities for betterment after our consultation.

The following entitlements are applicable to individual Fellows:

Open Association of Research Society, U.S.A (OARS) By-laws states that an individual Fellow may use the designations as applicable, or the corresponding initials. The Credentials of individual Fellow and Associate designations signify that the individual has gained knowledge of the fundamental concepts. One is magnanimous and proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice.

Open Association of Research Society (US)/ Global Journals Incorporation (USA), as described in Corporate Statements, are educational, research publishing and professional membership organizations. Achieving our individual Fellow or Associate status is based mainly on meeting stated educational research requirements.

Disbursement of 40% Royalty earned through Global Journals : Researcher = 50%, Peer Reviewer = 37.50%, Institution = 12.50% E.g. Out of 40%, the 20% benefit should be passed on to researcher, 15 % benefit towards remuneration should be given to a reviewer and remaining 5% is to be retained by the institution.

We shall provide print version of 12 issues of any three journals [as per your requirement] out of our 38 journals worth $ 2376 USD.

Other:

The individual Fellow and Associate designations accredited by Open Association of Research Society (US) credentials signify guarantees following achievements:

- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.

- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10%discount if one is co-author or main author among group of authors.
- The Fellow can organize symposium/seminar/conference on behalf of Global Journals Incorporation (USA) and he/she can also attend the same organized by other institutes on behalf of Global Journals.
- The Fellow can become member of Editorial Board Member after completing 3yrs.
- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

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- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of "Difference of Opinion [if any]" among the Board members, our decision will be final and binding to everyone.

"

Preferred Author Guidelines

We accept the manuscript submissions in any standard (generic) format.

We typeset manuscripts using advanced typesetting tools like Adobe In Design, CorelDraw, TeXnicCenter, and TeXStudio. We usually recommend authors submit their research using any standard format they are comfortable with, and let Global Journals do the rest.

Alternatively, you can download our basic template from https://globaljournals.org/Template

Authors should submit their complete paper/article, including text illustrations, graphics, conclusions, artwork, and tables. Authors who are not able to submit manuscript using the form above can email the manuscript department at submit@globaljournals.org or get in touch with chiefeditor@globaljournals.org if they wish to send the abstract before submission.

Before and during Submission

Authors must ensure the information provided during the submission of a paper is authentic. Please go through the following checklist before submitting:

1. Authors must go through the complete author guideline and understand and *agree to Global Journals' ethics and code of conduct,* along with author responsibilities.
2. Authors must accept the privacy policy, terms, and conditions of Global Journals.
3. Ensure corresponding author's email address and postal address are accurate and reachable.
4. Manuscript to be submitted must include keywords, an abstract, a paper title, co-author(s') names and details (email address, name, phone number, and institution), figures and illustrations in vector format including appropriate captions, tables, including titles and footnotes, a conclusion, results, acknowledgments and references.
5. Authors should submit paper in a ZIP archive if any supplementary files are required along with the paper.
6. Proper permissions must be acquired for the use of any copyrighted material.
7. Manuscript submitted *must not have been submitted or published elsewhere* and all authors must be aware of the submission.

Declaration of Conflicts of Interest

It is required for authors to declare all financial, institutional, and personal relationships with other individuals and organizations that could influence (bias) their research.

Policy on Plagiarism

Plagiarism is not acceptable in Global Journals submissions at all.

Plagiarized content will not be considered for publication. We reserve the right to inform authors' institutions about plagiarism detected either before or after publication. If plagiarism is identified, we will follow COPE guidelines:

Authors are solely responsible for all the plagiarism that is found. The author must not fabricate, falsify or plagiarize existing research data. The following, if copied, will be considered plagiarism:

- Words (language)
- Ideas
- Findings
- Writings
- Diagrams
- Graphs
- Illustrations
- Lectures

- Printed material
- Graphic representations
- Computer programs
- Electronic material
- Any other original work

Authorship Policies

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1. Substantial contributions to the conception and acquisition of data, analysis, and interpretation of findings.
2. Drafting the paper and revising it critically regarding important academic content.
3. Final approval of the version of the paper to be published.

Changes in Authorship

The corresponding author should mention the name and complete details of all co-authors during submission and in manuscript. We support addition, rearrangement, manipulation, and deletions in authors list till the early view publication of the journal. We expect that corresponding author will notify all co-authors of submission. We follow COPE guidelines for changes in authorship.

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Appealing Decisions

Unless specified in the notification, the Editorial Board's decision on publication of the paper is final and cannot be appealed before making the major change in the manuscript.

Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

Declaration of funding sources

Global Journals is in partnership with various universities, laboratories, and other institutions worldwide in the research domain. Authors are requested to disclose their source of funding during every stage of their research, such as making analysis, performing laboratory operations, computing data, and using institutional resources, from writing an article to its submission. This will also help authors to get reimbursements by requesting an open access publication letter from Global Journals and submitting to the respective funding source.

Preparing your Manuscript

Authors can submit papers and articles in an acceptable file format: MS Word (doc, docx), LaTeX (.tex, .zip or .rar including all of your files), Adobe PDF (.pdf), rich text format (.rtf), simple text document (.txt), Open Document Text (.odt), and Apple Pages (.pages). Our professional layout editors will format the entire paper according to our official guidelines. This is one of the highlights of publishing with Global Journals—authors should not be concerned about the formatting of their paper. Global Journals accepts articles and manuscripts in every major language, be it Spanish, Chinese, Japanese, Portuguese, Russian, French, German, Dutch, Italian, Greek, or any other national language, but the title, subtitle, and abstract should be in English. This will facilitate indexing and the pre-peer review process.

The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.

Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11'", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.

Format Structure

It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

All manuscripts submitted to Global Journals should include:

Title

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

Author details

The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Keywords

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

Abbreviations

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

Formulas and equations

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

Tables, Figures, and Figure Legends

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.

Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Medical Research Paper

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of medical research then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.

6. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

8. Make every effort: Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. Think technically: Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

21. Adding unnecessary information: Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

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Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

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Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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