



# Proceedings of The 9th International Nursing Conference

**NURSES AT THE FOREFRONT TRANSFORMING  
CARE, SCIENCE AND RESEARCH**

Universitas Airlangga, Faculty of Nursing  
April 7-8, 2018  
Surabaya, Indonesia

Co-Host and Partners





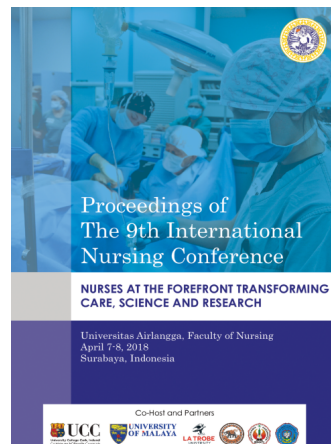
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## Proceedings

### Proceedings of the 9th International Nursing Conference

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**Foreword:** Assalamualaikum Warahmatullahi Wabarakatuh Honorable Rector of Universitas Airlangga Honorable Dean of Faculty of Nursing, Universitas Airlangga Honorable Head of Co-Host Institutions Distinguished Speakers and all Participants Praise the presence of God Almighty, for his mercy so that Faculty of Nursing Airlangga University can organized The 9th International Nursing Conference 2018 "Nurses at The Forefront in Transforming Care, Science, and research". Welcome in Surabaya, City of Heroes Indonesia. This international nursing conference is conducted by the Faculty of Nursing Universitas Airlangga with cooperation of two nursing schools throughout the nation. These institutions including, Poltekkes Kementerian Kesehatan Surakarta, and STIKES Hang Tuah Surabaya. Once more aims to elaborate with the aforementioned institutions and international universities through holding an international nursing conference. The international universities include: La Trobe University (Australia), University of Colleague Cork (Ireland), University of Malaya (Malaysia), and Naresuan University (Thailand). Proceeding of this International Nursing Conference will be

submitted to SCOPUS. The selected papers will be submit at Jurnal Ners and online ISSN proceeding. Participants of this conference are lecturers, nurses, students both from clinical and educational setting, regional and overseas area. Finally, I would like to thanks to all speakers, participants, and sponsors so that this conference can be held successfully. Please enjoy the international conference, I hope we all have a wonderful time at the conference. Wassalamualaikum Warahmatullahi Wabarakatuh Chair of Committee **(Less)**

**Volumes:**

Vol. 1 - 978-989-758-336-0

Papers

Authors

Show  papers

**Resiliency Experiences of Family Members Who Take Care of Patients with Schizophrenia** P. 5 - 13

Rizki Fitriyasaki , Ah. Yusuf , Rr. Dian Tristiana and Rachmat Hargono DOI:10.5220/000831960

**Nurses' Behavior and Support Systems as External Factors of Nurse-Patient Interaction in the Dialysis Unit** P. 14 - 21

Ika Yuni Widayawati , Ika Nur Pratiwi , Laily Hidayati , Tintin Sukartini , Abu Bakar and Lailatun Ni'mah DOI:10.5220/000831970

**Psychoeducation Dhikr Increases Spiritual Responses of Primiparous Women** P. 22 - 28

Sri Wahyuni , Anies , Ariawan Soejoenoes and Suhartono Taat Putra DOI:10.5220/000831980

**Family Knowledge and Attitudes to Improve Medication Adherence in Patients with Pulmonary Tuberculosis** P. 29 - 32

Lailatun Nimah , Rini Sartika and Makhfudli DOI:10.5220/000831990

**The Degradation of Cortisol in Coronary Heart Patients Receiving Islamic Nursing Care: A Pilot Study** P. 33 - 37

Abu Bakar , Nursalam , Kusnanto , Merryana Adriani and Siti Nur Qomariah DOI:10.5220/000832000

**Peripheral Blood Profiles of CCl4-Induced Wistar Rats after Date Seed Steeping Treatment** P. 38 - 43

Saryono , Atikah Proverawati , Hernayanti Hernayanti and Ferry Effendi DOI:10.5220/000832010

**Correlation of Interpersonal Factors, Situational with Cervical Cancer Prevention in Woman of Childbearing Age** P. 44 - 50

Ni Ketut Alit Armini , Rista Fauziningtyas and Anneke Widi Prastiwi DOI:10.5220/000832020

**The Determinants of Husbands' Support in Maternal Care Access in Public Health Centers - A Cross-sectional Study on Planned Behavior Theory** P. 51 - 55

Setho Hadisuyatmana , Ni Ketut Alit Armini and Nusrotud Diana DOI:10.5220/000832030

## Development Tools for Case Management: A Pilot Study

P. 56 -  
60

Nursalam , Candra Panji Asmoro , Tintin Sukartini , Hanik  
Endang Nihayati , Erna Dwi Wahyuni , Eka Mishbahatul MHas and  
Kristiawati

DOI:10.5220/000832040

## Dental Caries Based on Age (Under Five Years Old Children)

P. 61 -  
66

Ristya Widi Endah Yani

DOI:10.5220/000832050

## Advanced Care Planning: An Educational Intervention for the Elderly in Indonesia - A Pilot Randomized Controlled Trial

P. 67 -  
72

Rista Fauziningtyas , Joni Haryanto and Suhartono Taat Putra

DOI:10.5220/000832060

## Effectiveness Difference of Family Psychoeducation Model and Family Centered Empowerment Model on Knowledge and Attitude in The Poor Family of Preventing Hypertention on Families in Distric Jember

P. 73 -  
77

Kurniawan Erman Wicaksono , Ristya Widi Endah Yani and  
Elfian Zulkarnain

DOI:10.5220/000832070

## Quality of Life in Patient Post Percutaneous Coronary Intervention (PCI)

P. 78 -  
83

Siti Lestari and Tri Sunaryo

DOI:10.5220/000832080

## The Involvement of Nursing Home Residents as Peers to Support Relocated Elders

P. 84 -  
88

Retno Indarwati , Rachmat Hargono , Setho Hadisuyatmana and  
Makhfudli

DOI:10.5220/000832090

## Foot Soaking Therapy with Warm Water Decrease Blood Pressure of Patients with Hypertension

P. 89 -  
93

Wantiyah , Bagus Arditya Husada and Latifa Aini Susumaningrum

DOI:10.5220/000832100

## Midwife Support and Nutritional Adequacy for the Prevention of Anemia During Pregnancy

P. 94 -  
100

Mira Triharini , Nursalam , Agus Sulistyono and Merryana Adriani

DOI:10.5220/000832110

## Comparison of Stress Level and Quality of Life in Elderly Who are Living with Chronic Illness in Bangkok and Surabaya

P. 101 -  
109

Ni Putu Wulan Purnama Sari and Jintana Artsanthia

DOI:10.5220/000832120

## Demographic Factors Affecting Turnover Intention Among Nurses Working in Hospital

P. 110 -  
115

Nurul Hikmatul Qowi , Nursalam and Tri Johan Agus Yuswanto

DOI:10.5220/000832130

## Improving Nurse Productivity Through Professionalism Self-Concept

P. 116 -  
120

I Gede Juanamasta , Kusnanto and Slamet Riyadi Yuwono

DOI:10.5220/000832140

Nuning Khurotul Af'ida , Nursalam and Ahsan

<b>Implementation of Case Management to Increase Quality of Nursing Services: A Systematic Review</b>	P. 121 - 131
Nur Hidayati , Tintin Sukartini and Padoli	DOI:10.5220/000832150
<b>Is Turning Every 1 Hour More Effective than Turning Every 2 Hours to Prevent Pressure Ulcer Development?</b>	P. 132 - 137
Rifa Rindayani Syafitri , Ira Suarilah and Makhfudli	DOI:10.5220/000832160
<b>Factors Affecting Lower Back Pain (LBP) among Undergraduate Nursing Students</b>	P. 138 - 145
Lisa Ardiavianti , Ferry Efendi , Iqlima Dwi Kurnia and Pei-Lun Hsieh	DOI:10.5220/000832170
<b>Relationship between Bullying and Social Anxiety and Withdrawal among Adolescents</b>	P. 146 - 149
Yesiana Dwi Wahyu Werdani	DOI:10.5220/000832180
<b>Evaluation on Symptoms and Self-Treatment due to Radiotherapy and Chemotherapy Based on Different Cancer Stage</b>	P. 150 - 156
	DOI:10.5220/000832190
<b>Nurses' Perception of Factors that Affect Social Engagement among Older person in the Community</b>	P. 157 - 160
Chong Mei Chan , Amirah Fatin , Thandar Soe Sumaiyah Jamaludin and Vimala Ramoo	DOI:10.5220/000832200
<hr/>	
<b>The Live Experience of People with Leprosy - A Systematic Review of Qualitative Evidence</b>	P. 161 - 173
Yudisa Diaz Lutfi Sandi , Tintin Sukartini and Ferry Efendi	DOI:10.5220/000832210
<hr/>	
<b>Evaluation the Effectiveness of Interventions to Prevent Acute Respiratory Infection (Pneumonia) among Children under Five Year - A Systematic Review</b>	P. 174 - 177
Ayudiah Uprianingsih , Budi Utomo and Retno Indarwati	DOI:10.5220/000832220
<hr/>	
<b>Family Support, Self-efficacy, Motivation, and Treatment Adherence in Multidrug-resistant Tuberculosis Patients</b>	P. 178 - 182
Tintin Sukartini , Ika Minarni and Candra Panji Asmoro	DOI:10.5220/000832230
<hr/>	
<b>Analysis of Factors Affected to Community Nurses's Role in Promotive and Preventive Care</b>	P. 183 - 187
Sismulyanto , Nursalam and Ferry Efendi	DOI:10.5220/000832240
<hr/>	
<b>Effects of Progressive Mobilization on Awareness Levels in Intensive Care Unit</b>	P. 188 - 191
Gusti Pandi Liputo , Nursalam and Puji Rahayu	DOI:10.5220/000832250
<hr/>	
<b>The Meaning of Breastfeeding Self-Efficacy in Working Mothers - A Qualitative Study</b>	P. 192 - 199
Sylvia Dwi Wahyuni , Budi Santoso , Mira Triharini and Novri Susan	DOI:10.5220/000832260
<hr/>	
<b>Supportive-Educative Nutrition Increases Family Support, Adequate Nutrition, and Decrease Diabetic Gastroparesis</b>	P. 200 - 205
Siti Nur Qomariah , I Ketut Sudiana , Harmayetty and Abu Bakar	DOI:10.5220/000832270
<hr/>	
Eka Mishbahatul Marah Has , Nita Tri Septiana and Herdina Mariyanti	

- Logotherapy Increase Self-efficacy and Improve Blood Pressure's Regulation in Patients with Hypertension** P. 206 - 214  
Happy Restu Widayati , Retno Indarwati and Erna Dwi Wahyuni DOI:10.5220/000832280
- The Influence of Jasmine Essential Oil Through Foot Submersion and Inhalation Method in Elderly Sleep Quality and Quantity** P. 215 - 219  
Komang Agus Jerry Widyanata , Kusnanto and Suprajitno DOI:10.5220/000832290
- Lifestyle Education Based on Electronic Media for Diabetes Management - A Systematic Review** P. 220 - 228  
DOI:10.5220/000832300
- Factors Affecting The Feeding Pattern of Under-Five Children with Stunting in Indonesia** P. 229 - 235  
Praba Diyan Rachmawati , Retnayu Pradanie and Robeta Lintang Dwiwardani DOI:10.5220/000832310
- 
- Sports Injury First Aid Behavior of Martial Arts Student Club Members** P. 236 - 243  
Deni Yasmara , Erna Dwi Wahyuni and Moh. Baharuddin Fatih DOI:10.5220/000832320
- 
- Description of Knowledge and Skill of Nurses to Interpret Basic ECG In The Hospital** P. 244 - 249  
Nissa Aruming Sila , Nursalam and M. Yusuf Asegaf DOI:10.5220/000832330
- 
- The Knowledge of Breast Cancer and the Practice of Breast Cancer Screening (Breast Self Examination) - A Systematic Review** P. 250 - 256  
Diana Hardiyanti , Desak Gede Agung Suprabawati and Esti Yunitasari DOI:10.5220/000832340
- 
- Knowledge, Attitude, and Experience about Industrial Disaster Mitigation and Preparedness** P. 257 - 262  
Erna Dwi Wahyuni , Deni Yasmara , Ika Wahyu Widyah Rufiyanti and Nadia Rohmatul Laili DOI:10.5220/000832350
- 
- Analysis of Factors Related to Disaster Preparedness in Undergraduate Health Students** P. 263 - 268  
Sriyono Sriyono , Deni Yasmara and Angger Pratama DOI:10.5220/000832360
- 
- Adolescent Dating Behaviour in Senior Hight School** P. 269 - 273  
Irwina Angelia Silvanasari , Florentina Sustini and Eka Mishbahatul Mar'ah Has DOI:10.5220/000832370
- 
- The Increased Interaction of Parents can Prevent Smoking Behavior and Alcohol Consumption of Adolescents in Indonesia** P. 274 - 279  
Iqlima Dwi Kurnia , Ilya Krisnana , Praba Diyan Rachmawati , Kristiawati , Yuni Sufyanti Arief , Hary Budiarto and M. Sayid J.R DOI:10.5220/000832380
- 
- Is Peer Education an Effective Method on Breast Cancers' Patient? - A Systematic Review** P. 280 - 286  
Diana Pefbrianti , Desak Gede Agung Suprabawati and Esti Yunitasari DOI:10.5220/000832390
- 
- Arum Dwi Ningsih , Muhammad Amin and Abu Bakar

<b>The Effect of Walking Exercise and Pursed Lips Breathing on Signs and Symptoms of COPD Patients: A Systematic Review</b>	P. 287 - 291
Zuliani , Muhammad Amin and Laily Hidayati	DOI:10.5220/000832400
<b>Perception and Self Care Behavior of Tuberculosis Patients Based on Leventhal Theory</b>	P. 292 - 297
Setyo Kurniawan , Tintin Sukartini and Joko Suwito	DOI:10.5220/000832410
<b>Disaster Nursing Preparedness in Local Wisdom - A Systematic Review</b>	P. 298 - 301
Sandi Alfa Wiga Arsa , Tintin Sukartini and Sri Utami	DOI:10.5220/000832420
<b>Threatening Factor Exposure Triggers Recurrence of Asthma in Children</b>	P. 302 - 308
Ah Yusuf , Praba Diyan Rachmawati and Mulyana	DOI:10.5220/000832430
<b>Experiences of Teenagers Spending the Night Hanging Out at Coffee Shops: A Phenomenology Study</b>	P. 309 - 313
Sofiana Salim , Elyana Asnar and Erna Dwi Wahyuni	DOI:10.5220/000832440
<b>Preoperative Anxiety and Self-Efficacy to Postoperative Exercise in Women undergoing Elective Caesarean Section</b>	P. 314 - 318
Retnayu Pradanie , Rr Dian Tristiana and Risma Dwi Lestari	DOI:10.5220/000832450
<b>Husband Knowledge and Attitude Towards Mother's Breastfeeding Self-Efficacy</b>	P. 319 - 323
Retno Purwandari , Aulia Bella Marinda and Mulia Hakam	DOI:10.5220/000832460
<b>Correlation between Student Centered Learning (SCL) and Learning Motivation of Nursing Student at Faculty of Nursing, University of Jember</b>	P. 324 - 328
Indrawati , I Ketut Sudiana and Muhammad Sajidin	DOI:10.5220/000832470
<b>Active, Passive, and Active-Assistive Range of Motion (ROM) Exercise to Improve Muscle Strength in Post Stroke Clients: A Systematic Review</b>	P. 329 - 337
Putu Intan Daryaswanti , Elyana Asnar and Ilya Krisnana	DOI:10.5220/000832480
<b>Effect of Cutaneous Stimulation and Virgin Coconut Oil on Skin Moisture in Patients with Chronic Renal Failure</b>	P. 338 - 344
Ilya Krisnana , Aria Aulia Nastiti and Dwi Hartini	DOI:10.5220/000832490
<b>Knowledge and Support of the Family as Factors Related to Chemotherapy Adherence of Clients with Breast Cancer</b>	P. 345 - 349
Aria Aulia Nastiti , Ni Ketut Alit Armini and Dwi Indah Nurani	DOI:10.5220/000832500
<b>The Correlation between Interpersonal Factors, Self-Efficacy with the Choice of IUD Contraception among Women of Childbearing Age Couples</b>	P. 350 - 354
Lukman Hakim , Ah. Yusuf and Purwaningsih	DOI:10.5220/000832510
<b>The Effect of Case Manager's Role to Patient Satisfaction - A Systematic Review</b>	P. 355 - 360
Diny Kusumawardani , Budi Utomo and Erna Dwi Wahyuni	DOI:10.5220/000832520
<b>The Evaluation of Motivational Interviews Influence for the Medication Adherence of Chronic Disease - A Systematic Review</b>	P. 361 - 365
Devi Mediarti , Rehana and Hidayat Arifin	DOI:10.5220/000832530
<b>Home Care by Ozone Bagging towards Diabetic Foot Ulcers Healing</b>	P. 366 - 372
Rosnani , Jawiyah and Devi Mediarti	DOI:10.5220/000832540
<b>Warm Steam Therapy to Increase Breast Milk Production of Post-Partum Mothers</b>	P. 373 - 378
Hanik Endang Nihayati , Alfita Nadziir and Rr. Dian Tristiana	DOI:10.5220/000832550
<b>The Impact of Using the Mental Health Smart Book (BISAA) to Increase Physical, Psychological, Social, and Spiritual Life Qualities in the Elderly</b>	P. 379 - 387
Elida Ulfiana , Dyah Priyantini and Rista Fauziningtyas	DOI:10.5220/000832560

- Physical Activity, Sleep Quality and Physical Fitness of the Elderly Who Lived in Nursing Home** P. 388 - 393  
Ninuk Dian Kurniawati and Nursalam DOI:10.5220/000832570
- Mind-Body-Spiritual Care for Coronary Heart Disease Patients - A Systematic Review** P. 394 - 405  
DOI:10.5220/000832580
- Sexual Activity of Male and Female Prisoners in Prison and The Impact on Sexual Orientation - A Systematic Review** P. 406 - 412  
Ely Rahmatika Nugrahani , Amalia Kusumaningsih , Nurilla Kholida , Siti Kholifah and Ah Yusuf DOI:10.5220/000832590
- 
- The Correlation between Self-efficacy and Quality of Life in Elderly Who are Living with Hypertension** P. 413 - 417  
Maria Manungkalit and Linda Juwita DOI:10.5220/000832600
- 
- Family Support for Better Self Care Behavior Patients with Type 2 Diabetes Mellitus - An Integrated Review** P. 418 - 427  
Made Mahaguna Putra , Kusnanto and Candra Panji Asmoro DOI:10.5220/000832610
- 
- An Evaluation of Medication Adherence in Tuberculosis Patients Based on Theory of Planned Behavior** P. 428 - 434  
Novian Mahayu Adiutama , Muhammad Amin and Abu Bakar DOI:10.5220/000832620
- 
- Lifestyle of Hypertensive Patients in the Coastal Area of Indonesia - A Systematic Review** P. 435 - 437  
Nurul Khusnul Khotimah , Kusnanto and Harmayetty DOI:10.5220/000832630
- 
- Reminiscence Therapy as a Strategy to Prevent Cognitive Decline in Elderly People** P. 438 - 441  
Nirmala K. S. , Riny Pujiyanti , M. Noor Ifansyah and I Kadek Dwi Swarjana DOI:10.5220/000832640
- 
- Coaching Improving Self-efficacy to Perform Salat (Muslim Prayer) Among Muslim Patients in Hospital** P. 442 - 445  
Hamdan Hariawan , Oedojo Soedirham and Abu Bakar DOI:10.5220/000832650
- 
- The Effect of Light Massage on Hemodynamic in Patients with Heart Failure - A Systematic Review** P. 446 - 451  
Galih Noor Alivian , Nursalam and M. Hasinuddin DOI:10.5220/000832660
- 
- Profile of the Growth and Development of Children Ages Toddler in Bulak Kenjeran Surabaya** P. 452 - 457  
Dwi Ernawati , Abdul Fauzi , M. Hendri Haryono , Dady Zharfan Hanif and Primalova Septiavy Estiadewi DOI:10.5220/000832670
- 
- Correlation between Spirituality and Coping Strategy in Patients with Type 2 Diabetes Mellitus** P. 458 - 465  
Nur Widayati , Nuhita Siti Rohmin and Retno Purwandari DOI:10.5220/000832680
-



- Analysis Factors Used Condom among Patient with HIV/AIDS Transmission to Housewife Living at Ex-Prostitution Area in Surabaya** P. 466 - 471  
Nessy Anggun Primasari , Niswa Salamung , Ahmad Ali Basri and Ester Radandima **DOI:10.5220/000832690**
- 
- Effectiveness of Indoor and Outdoor Preparedness Simulation in Improving First Aid Competency in Emergency Response Phase Among Trained Lay People in Surakarta Municipality** P. 472 - 476  
Addi Mardi Harnanto and Sunarto **DOI:10.5220/000832700**
- 
- The Nurse Performance of Ponkesdes in Giving Family Nursing Care** P. 477 - 481  
Luluk Fauziyah J , Joni Haryanto and Siti Nur Kholifah **DOI:10.5220/000832710**
- 
- Is an Educational Level Affect Women's Participation on Cervical Cancer Screening? - A Systematic Review** P. 482 - 488  
Rafika Rosyda , Budi Santoso and Esti Yunitasari **DOI:10.5220/000832720**
- 
- Sound Feedback of Metronome can Improve High Quality Cardio Pulmonary Resuscitation - A Systematic Review** P. 489 - 494  
Senja Setiaka , Nursalam and Harmayetty **DOI:10.5220/000832730**
- 
- A Phenomenology Study View of Mental Health Enforcement in Surabaya Urban Society - A Systematic Review** P. 495 - 499  
Nurul Arifah , Merryana Adriani and Hanik Endang Nihayati **DOI:10.5220/000832740**
- 
- Non-invasive Interventions to Treat Depressed Elders: A Systematic Review Community-based Intervention to Prevent Depression in Elderly** P. 500 - 507  
Triyana Puspa Dewi , Siti Riskika , Agus Yulianto , Rio Ady Erwansyah and Makhfudli **DOI:10.5220/000832750**
- 
- The Effect of Assertive Acceptance Commitment Therapy on the Ability to Control Violent Behavior of Schizophrenic Patients** P. 508 - 512  
Rustafariningsih , Ah Yusuf and Hanik Endang Nihayati **DOI:10.5220/000832760**
- 
- Effectiveness Poskestren to Overcome Health Problems in Islamic Boarding School - A Systematic Review** P. 513 - 515  
Ulum Mab'ruroh , Sulistiawati and Retno Indarwati **DOI:10.5220/000832770**
- 
- The Preparation of Lactation on 3rd Trimester Pregnant Women with the Approach of WHO Behavior Determinant - A Factor Analysis** P. 516 - 520  
Esti Yunitasari , Iqlima Dwi Kurnia , Nindhita Dyah S and Tsuwaibatul Islamiyah **DOI:10.5220/000832780**
- 
- Factors Associated with Nurses' Adherence to the Use of Protective Precaution in Administering Chemotherapy Drug** P. 521 - 526  
Ika Nur Pratiwi , Laily Hidayati and Mukhamad Nursalim **DOI:10.5220/000832790**
-

- The Relationship of Self Care with Elderly Well Being - A Systematic Review** P. 527 - 531  
Muhammad Luthfi , Tintin Sukartini and Ferry Efendi **DOI:10.5220/000832800**
- 
- Factors Affecting Smoking Cessation Among Adolescents - An Application of Theory of Planned Behavior** P. 532 - 537  
Lingga Curnia Dewi , Laily Hidayati , Aria Aulia Nastiti and Nurul Istifaizah **DOI:10.5220/000832810**
- 
- Bullying Victimization Effect at Physical, Phychological, and Social in Adolescence - A Systematic Review** P. 538 - 546  
Wildan Akasyah , Hendy Muagiri Margono and Ferry Efendi **DOI:10.5220/000832820**
- 
- Caregiver Burden, Quality of Life and Empowerment Intervention in Caregiver Family with Schizophrenia - A Systematic Review** P. 547 - 551  
Sri Widowati , Shrimarti Rukmini Devi and Hanik Endang Nihayati **DOI:10.5220/000832830**
- 
- The Relationship of Spiritual Level and Patient Anxiety in the General Ward** P. 552 - 556  
Merina Widyastuti , Iis Fatimawati and Siti Fatimah **DOI:10.5220/000832840**
- 
- Factors Associated with Activities of Daily Living among Patients with Diabetic Foot Ulcers - A Pilot Study** P. 557 - 562  
Iwan Purnawan , Agis Taufik , Annas Sumeru and Eman Sutrisna **DOI:10.5220/000832850**
- 
- Effectiveness Oxytocin Massage to Colostrum Release for Post Partum Pervagina in Coastal Area of Surabaya** P. 563 - 566  
Hidayatus Sya'diyah , Sukma Ayu Candra Kirana and Navy Retno Octaviana W **DOI:10.5220/000832860**
- 
- The Corellation of Social Environment and Quality of Life People Living At Coastal Areas In Surabaya** P. 567 - 570  
Meiana Harfika , Lela Nurlela and Mahesta Ratna Dewi **DOI:10.5220/000832870**
- 
- Early Warning Score System (EWSS) and Length of Stay Patients with Dengue Hemmorrhagic Fever** P. 571 - 575  
Dwi Priyantini , Imroatul Farida and Herfina Setianingsih **DOI:10.5220/000832880**
- 
- Family-Centered Empowerment in Caring Children with Leukemia** P. 576 - 579  
Yuni Sufyanti Arief , Nursalam , I Dewa Gede Ugrasena and Shrimarti Rukmini Devy **DOI:10.5220/000832890**
- 
- Modelling Factors that Affect Nutritional Status of Toddler in Coastal Area Surabaya East Java Indonesia** P. 580 - 585  
Qori' Ila Saidah and Ayu Citra Mayasari **DOI:10.5220/000832900**
- 
- The Effectiveness of Group Activity Therapy: Aerobic Low Impact (Poco-Poco) to Socialization Ability in Social Isolation Patients** P. 586 - 589  
Siti Munawaroh , Dya Sustrami , Ninik Ambar Sari and Nur Muji Astuti **DOI:10.5220/000832910**
-

- The Implementation Discipline and Work Productivity of Non Military Nurses** P. 590 - 595  
Setiadi and Muh. Zul Azhri Rustam DOI:10.5220/000832920
- 
- The Analysis on Protein Energy Supply Concerning Stunting Incidents in Young Children Under Five Year Old at Primary Care Unit of Tanah Kali Kedinding Surabaya** P. 596 - 600  
Diyah Arini and Dwi Ernawati DOI:10.5220/000832930
- 
- Dairy Food Consumption, BMI, and Their Relation with Elevated Blood Pressure (EBP) in Middle Adulthood** P. 601 - 604  
Dhian Satya R and Ari Susanti DOI:10.5220/000832940
- 
- Caring Competency for Undergraduate Nursing Students: A Systematic Review with Implication for Nurse Educators in Teaching Caring** P. 605 - 609  
Setiawan , Dewi Elizadiani Suza and Fahrizal Alwi DOI:10.5220/000832950
- 
- The Effectiveness of Carica papaya L. Sap and Piper betle L. in Control of Mosquito Larvae Aides Aegypti Growth** P. 610 - 614  
Nur Huda and Nur Chabibah DOI:10.5220/000832960
- 
- The Status of BCG Immunization in Pre-Schoolers in Relation with Pulmonary Tuberculosis Incidence in North Surabaya** P. 615 - 620  
Dini Mei Widayanti , Sapto Dwi Anggoro and Ita Hernawati DOI:10.5220/000832970
- 
- The Nurses' Compliance in Femoral Sheath Removal Procedure in Relation to the Incidence of Hematoma in Patients after PTCA** P. 621 - 625  
Jati , Christina Yuliasuti and Nisha Dharmayanti Rinarto DOI:10.5220/000832980
- 
- Family Support Relationships with Patient Adaptation Ability above with Diagnosis Hallucination of Post Care** P. 626 - 630  
Lela Nurlela , Meiana Harfika and Laelani Eka Novitasari DOI:10.5220/000832990
- 
- The Relationship between Sensory Neuropathy and Self-efficacy and the Degree of Diabetic Foot Injuries in Type 2 Diabetes Mellitus Patient** P. 631 - 638  
Kusnanto , Nurul Aini and Ferry Efendi DOI:10.5220/000833000
- 
- Improving Compliance using Helmet through Watching Video in Vocational Student Riding Motorcycles** P. 639 - 641  
Suyanto and Hartono DOI:10.5220/000833010
- 
- Family Support and Coping Mechanisms in Patients with Pulmonary Tuberculosis** P. 642 - 647  
Makhfudli , Alfani Fachrul Rozi , Tintin Sukartini and Candra Panji Asmoro DOI:10.5220/000833020
- 
- The Influence of Cognitive Therapy on Quality of Life of People with Diabetes Melitus** P. 648 - 652  
Dwi Heppy Rochmawati DOI:10.5220/000833030
-

- Best Practice of Development of Nursing Knowledge Management System at Universitas Airlangga Hospital Indonesia** P. 653 - 656  
Purwaningsih , Nasronudin and Nyoman Anita Damayanti **DOI:10.5220/000833040**
- 
- The Relationship between Healthy Housing Conditions and Pulmonary Tuberculosis** P. 657 - 663  
Andri Setiya Wahyudi , Raufuddin and Ira Suarilah **DOI:10.5220/000833050**
- 
- The Cultural Competency Scale for Clinical Pediatric Nurse (CCS-CPN) in Indonesia: Scale Development and Psychometric Evaluation** P. 664 - 671  
Dewi Elizadiani Suza , Setiawan , Farida Linda Sari Siregar and Diah Arruum **DOI:10.5220/000833060**
- 
- Empowerment of Posbindu Cadres in Improving Self-Care Activity in Diabetes Mellitus Based on Levine Conversation** P. 672 - 675  
Alik Septian Mubarrok , Fahrudin Kurdi , Ratna Puji Priyanti and Supriyah Praningsih **DOI:10.5220/000833070**
- 
- The Correlation of Self-efficacy with Anxiety in Stroke Patients** P. 676 - 681  
Pawiono , Dewi Agustin , Heni Maryati and Mamik Ratnawati **DOI:10.5220/000833080**
- 
- The Correlation of Motivation with Cadre's Performance in the Implementation of Posyandu** P. 682 - 686  
Mumpuni Dwiningtyas , Tesa Isnawati , Monika Sawitri Prihatini and Effy Kurniati **DOI:10.5220/000833090**
- 
- Perception of Family Burden Having Children With Mental Retardation** P. 687 - 690  
Shanti Rosmaharani , Iswanto Karso , Rifa'i and Rodiyah **DOI:10.5220/000833100**
- 
- Increased Self Efficacy Fathers in Growth Stimulation and Development Under Five Years (BALITA) with the Health Promotion Model Approach** P. 691 - 695  
Heri Wibowo and Ririn Probowati **DOI:10.5220/000833110**
- 
- Spiritual Story Telling (SST) to Improve Violent Behavior Control Ability in Children** P. 696 - 698  
Wahyu Endang Setyowati and Iwan Ardian **DOI:10.5220/000833120**
- 
- Spiritual Endorphine Stimulation as Methods to Increase Fetal Well Being on Pregnant Woman with Early Premature Rupture of Membranes** P. 699 - 702  
Sri Wahyuni , Tutik Rahayu and Apriliani Yulianti Wuriningsih **DOI:10.5220/000833130**
- 
- Sleep Quality Relation with Hemodynamic Status on AMI Patients in ICVCU Room** P. 703 - 706  
Akhmad Rifai and Syifa Mutia Desiani **DOI:10.5220/000833140**
- 
- Understanding Pediatric HIV Care Management to Improve the Quality of Care for Children Infected with HIV in Indonesia** P. 707 - 711  
Nuzul Qur'aniati , Linda Sweet , Dean Whitehead and Alison Hutton **DOI:10.5220/000833150**

## Early Breastfeeding in Post-Section Birth

P. 712 -  
716

Sestu Retno D.A. , Niken Grah Prihartanti and Musafa'ah

DOI:10.5220/000833160

## Impact of Experiential Learning Method on the Knowledge, Attitude, and Coping Mechanism of Cancer Patient's Companions at the Java Branch of Indonesian Cancer Foundation

P. 717 -  
724

Yulis Setiya Dewi , Nuzul Qur'aniati and Titis Eka Apriliyanti

DOI:10.5220/000833170

## The Effectiveness of Kegel Exercise or Pelvic Floor Muscle Training to Incontinence Urine for Client Post Trans Urethral Resection of The Prostate - A Systematic Review

P. 725 -  
733

Yani Erniyawati , Kusnanto and Padoli

DOI:10.5220/000833180

## The Effectiveness of Psychoeducation in Improving Psychological and Emotional Health Patients with Chronic Diseases (Tuberculosis): A Systematic Review

P. 734 -  
737

Nurul Khoirun Nisa , Soedarsono and Makhfudli

DOI:10.5220/000833190

## The Influence of Health Coaching on the Self Efficacy of Women of Childbearing Age in the Prevention of Cervical Cancer with Visual Inspection Acetic Acidate (IVA)

P. 738 -  
742

Khairun Nisa' , Budi Santoso and Esti Yunitasari

DOI:10.5220/000833200

## Developing the Case Managers Role-Function Instrument in the Professional Nursing Care Method: The Case Management

P. 743 -  
745

Aulia Rahman , Nursalam and Candra Panji Asmoro

DOI:10.5220/000833210

## The Correlation Between the Type, Quantity, and Frequency of Eating with Defecation Patterns and Muslim Students' Indigestion During Ramadan Fasting

P. 746 -  
751

Anisa Ramadani , Laily Hidayati and Praba Diyan Rachmawati

DOI:10.5220/000833220



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# Evaluation the Effectiveness of Interventions to Prevent Acute Respiratory Infection (Pneumonia) among Children under Five Year

## A Systematic Review

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**Keywords:** Pneumonia, Intervention, Prevention, Children Under Five Year.

**Abstract:** Pneumonia accounted for 15% of the 6.3 million deaths among children under the age of five years. It kills children more than any other illness. Each year, over 2 million children die from pneumonia, accounting for 1 in 5 under-five deaths worldwide. A variety interventions to prevent and to reduce pneumonia are available. This systematic review was carried out in order to inform and to know some interventions that can prevent pneumonia among children under five year. **Methods :** We identified articles through databases searching: Proquest, Science Direct, SpringerLink, and Ebsco Host, published between (2002-2017). **Results:** Ten articles were analysed and selected from 1271. **Conclusions:** The studied evaluated that the integration of the interventions such as hand washing, vaccination, exclusive breastfeeding, giving zinc supplement potentially be more cost-effective, efficient and sustainable. Other interventions that may be effective involve providing health education to family or caregivers to raise awareness about this forgotten killer disease of children and to reduce child deaths from pneumonia.

## 1 BACKGROUND

Pneumonia is a severe form of acute lower respiratory infection responsible for high preventable morbidities and mortality among under-five year child. According to WHO estimates. It persist the leading killer of young children around the world. Pneumonia is killing 1 million children under the age of five years accounting for more young deaths annually than AIDS, malaria and measles combined each every year. This loss of life is especially tragic because pneumonia can be prevent and be treat. (International Vaccine Acces Centre, 2015).

In 2015, the 10 countries that contributed most to the global burden of child pneumonia were consist of India, Nigeria, Pakistan, Democratic Republic of Congo, Angola, Ethiopia, Indonesia, Chad, Afghanistan, Niger (WHO, 2015).

A variety interventions to prevent and to reduce pneumonia are available. These intervention can plausibly prevent pneumonia. Considering the worldwide high burden of ARI, preventing and reducing pneumonia in children is an crucial aspect

of a strategy to reduce child mortality. This systematic review aimed to evaluate the effectiveness of interventions to prevent pneumonia.

## 2 METHODS

We identified the articles according to the Cochrane group's recommendations. In addition, we actively searched articles through databases searching: Proquest, Science Direct, and EbscoHost, published between (2005-2017). The keywords used to search the articles included prevention, pneumonia, Acute Respiratory Infection, Children.

We found ten articles that suitable with our Inclusion Criteria. Our inclusion criteria are all kind of intervention in preventing and reducing pneumonia of children under five year old. All articles using the English language were included. We excluded the articles if the target population focused on adults or elderly.

### 3 RESULTS

Ten articles that have been collected, analyzed and scored, obtained the following results.

Research conducted by Luby *et al* (2005) aimed to know the effect of hand washing on acute respiratory-tract infections in prevention of pneumonia. Study result that children under 5 years in households that received plain soap and handwashing promotion had a 50% lower incidence of pneumonia than the children in controls.

Research conducted by Mortimer *et al* (2017) was to compare the effects of a cleaner burning biomass-fuelled cookstove intervention to continuation of open fire cooking on pneumonia in children living in two rural district show that there is no evidence that an intervention can prevent and reduced the risk of pneumonia in children. The study suggest that Effective strategies to reduce the adverse health effects of household air pollution are needed.

Research conducted by Gabida *et al* (2013) aimed to evaluate communities with village health workers who received training in cIYCF and the distribution of educational materials (newsletter) to mothers in promotion of exclusive breastfeeding using a cluster randomized controlled trial. Result showed that combination of intervention with village health worker and distribution of a newsletter to mothers on promotion of exclusive breastfeeding can prevent and reduce the pneumonia compared to non combine intervention.

The study by Rodriguez *et al* (2005) aims to evaluated the effect of a moderate dose of vitamin A treatment on the duration of respiratory signs in children with pneumonia. Result show there is no effect of a moderate dose of vitamin A supplementation on the duration of pneumonia in underweight or normal-weight children under 5 year old.

Research conducted by Fortunato *et al* (2015) aimed to assessed effectiveness of PCVs in preventing severe pneumococcal pneumonia in children. Result showed that PCVs program has a significant impact on reduction of pneumonia in children aged under 5 years both at a national level and in those regions with a longer vaccination history, with nearly a 40% reduction of hospitalizations for both outcomes.

Research by Mackenzi *et al* (2017) the results of the study aimed to measure the impact of the introduction of vaccines on pneumonia incidence. Result show that there is substantial reduction of cases of pneumonia in hospital.

Research by Smith *et al* (2011) aimed to investigated whether an intervention to lower indoor wood smoke emissions would prevent and reduce pneumonia in children. Result show that the intervention did not significantly reduce physician-diagnosed pneumonia for children younger than 18 months. However the study suggest that stove or fuel interventions producing lower average exposures than these chimney stoves might be needed to substantially reduce pneumonia in populations heavily exposed to biomass fuel air pollution.

The research by Brooks (2005) aimed to examine whether giving zinc weekly could prevent clinical pneumonia in children younger than 2 years. Result showed that 70 mg of zinc weekly could reduces pneumonia and mortality in young children.

Research by Shah *et al* (2014) aims to evaluate the benefits of zinc gluconate supplementation for 2 months period compared to placebo in reducing respiratory morbidity in acute lower respiratory infected children up to 5 years of age The final analysis showed that the number of episodes of acute lower respiratory infections and severe acute lower respiratory infections were significantly lower in zinc group compared to placebo group (20.8% vs. 45.8% (P = 0.009) and 21.7% vs. 58.3% (P < 0.001), respectively)

Gupta *et al* (2016) conducted a randomized double-blind, placebo-controlled trial aimed to evaluate the efficacy of single oral mega-dose of Vitamin D3 for treatment and prevention of pneumonia in under five children. Result show there was no significant effect of vitamin D supplementation on IgA and IgG and in reducing pneumonia.

### 4 DISCUSSION

This systematic review aimed to identify the articles around prevention of pneumonia specifically in children under five year. The reasons for conducting this systematic review are related to pneumonia as major killers of young children and we need to know what kind of interventions that we could use to prevent this disease.

This systematic review identified and evaluated several of the interventions that can prevent and reduce pneumonia rates such as exclusive breastfeeding, vaccination, reducing indoor air pollution, giving Vitamin A, Zinc, Vitamin D, and also health education intervention. Some of that are effective but the others are not. This could indicate



the need for a more research to prove the effectiveness of each intervention.

From the articles we know that hand washing, vaccination, exclusive breastfeeding, giving zinc supplement intervention are effective in preventing and reduce pneumonia in several settings. While other interventions such as reducing indoor air pollution, cleaner burning biomass-fuelled cook stove, giving vitamin A showed non significant effect to prevent pneumonia. Actually we couldn't say that we should leave the intervention behind, it indicates that there is a need for further research to prove it. The result may differ in other setting and it usually effect by length of study, participant number and research design so we needed to fully investigate these intervention.

The studied evaluated that the integration of interventions potentially be more effective, efficient and sustainable. Other interventions that may be effective involve providing health education to family or caregivers to raise awareness about this neglected disease and to reduce child deaths from pneumonia.

## 5 CONCLUSION

The studied evaluated that the integration of the interventions such as hand washing, vaccination, exclusive breastfeeding, giving zinc supplement intervention potentially be more cost-effective, efficient and sustainable. Other interventions that may be effective involve providing health education to family or caregivers to increase apprehension about this forgotten killer disease of children and to reduce child deaths from pneumonia.

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