PENGARUH PENDIDIKAN IBU UNTUK MENGATASI KEMATIAN BAYI DI ASIA TENGGARA

(The Effect of Mother Education to Reduce Infant Mortality in South East Asia)

Sri Sunaringsih Ika Wardojo

Program Study Ilmu Keperawatan, Fakutas Ilmu Kesehatan
Universitas Muhammadiyah Malang
e-mail. srisunaringsihika@gmail.com

ABSTRAK

SEAWHO yang terdiri dari 11 negara-negara berkembang , seperti Bangladesh , Bhutan , Korea Utara , India , Indonesia , Maladewa , Myanmar , Nepal , Sri Lanka , Thailand dan Timor Leste , memiliki masalah kesehatan masyarakat yang sama masalah sehubungan dengan tingginya angka kematian bayi di wilayah ini , dan sudah terjadi selama sepuluh tahun terakhir. Bagaimanapun ibu memainkan peran ganda dalam keluarga yang mempengaruhi kesehatan dan kesejahteraan semua anggota keluarga, termasuk anak-anak. Namun, pendidikan ibu dianggap salah satu kemungkinan kendala utama untuk promosi kesehatan bangsa , yang mempengaruhi peningkatan prevalensi kematian bayi di wilayah tersebut. Mendukung pernyataan tersebut, Commision on The Social Determinants of Health (2008) mengatakan pendidikan ibu diasumsikan menjadi salah satu penentu sosial utama masalah kesehatan anak . Berdasarkan hasil review artikel dari 25 artikel dan 3 literatur umum, itu diketehui bahwa ketidaksetaraan pendidikan perempuan , yang terjadi di sebagian besar negara-negara Asia Tenggara , telah secara signifikan mempengaruhi masalah kesehatan bayi di wilayah ini , karena menjadi penghalang utama bagi ibu untuk memperbarui informasi tentang pengetahuan kesehatan anak, kurang diberdayakan untuk otonomi keuangan , kurang pengambilan keputusan kekuasaan, dan akses dan kontrol atas sumber daya dalam rumah tangga , di mana aspek-aspek secara signifikan berkontribusi terhadap kurang kelangsungan hidup anak dalam keluarga. Oleh karena itu, untuk menutup kesenjangan pendidikan perempuan di negara-negara Asia Tenggara akan menjadi program yang sangat berguna karena tidak hanya untuk mengurangi angka kematian bayi di wilayah ini , tetapi juga meningkatkan kualitas kesehatan penduduk secara umum.

Kata kunci: Pendidikan ibu, kematian bayi, South East Asia Region

ABSTRACT

SEAWHO which comprises of 11 developing countries , such as Bangladesh, Bhutan, North Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor Leste, has similar public health issue regarding to the high infant mortality rate in this region, and it happened over the last ten years . However, mothers play multiple roles in the family that affect health and well being of all family members, including children. However, maternal education assumed to be one possibilities of the primary obstacles to the promotion of the nation's health, which escalated the prevalence of infant mortality in those region. Supporting with that statement, Commision on The Social Determinants of Health (2008) said maternal education assumed to be one of the major social determinant of child health problems. Based on narrative review from 25 articles and 3 grey literature, it was knowen that inequality of women education, which occurred in most of South East Asian countries, has significantly influenced the infant health problem in this region, since it became major barrier for mothers to update information about child health knowledge, less empowered to the financial autonomy, less decision making power, and access and control over resources

within household, in which those aspects significantly contributes to the less child survival within family. Therefore, closing the gap of women education in South East Asian countries will be a useful program not only reducing infant mortality in this region, but also increasing quality of population health.

Keyword: Maternal education, infant mortality, South East Asian Region

BACKGROUND

South East Asian Region of the World Health Organization (WHO) which comprises of 11 developing countries , such as Bangladesh, Bhutan, North Korea, India, Indonesia, *Lecturer of Muhammadiyah University of Malang

Maldives, Myanmar, Nepal, Sri Lanka, Thailand and Timor Leste, has similar public health issue regarding to the high infant mortality rate in this region, and it happened over the last ten years (Bhandari 2012; Gokhale et.al 2004; Ashworth & Waterlow 1982).

Based on study by Hawkins (2011), revealed there were 7.6 million under five years children die every year, and almost one-third of global mortality in neonates and children under 5 years of age happened in this region. Bangladesh, as the highest infant mortality rates in this region, has 300.000 numbers of babies dying within the first 24 hours of their birth in every year, and it accounts for 48,99 infant deaths per 1000 live birth every year (Kielman and McCord's 2008). While, Myanmar, as the second position of the highest infant mortality rates, has 48,99 infant deaths per 1000 live birth per year, which mainly caused by malnutrition problem (severe wasting and stunting) that commonly happen for children under 5 years old (Apodaca 2008). Gokhale et al. (2004) reported that in India, as the third position with 46,07 infant deaths per 1000 live birth, for the last ten years 193, 000 of children lost their life chance before they reached the age of 5 years caused by malnutrition, pneumonia, diarrhoea, malaria and health problems during the first month of life. Then, the average of infant mortality in other South East Asian countries (Indonesia, Nepal, Sri Lanka, Thailand, Timor Leste, North Korea, Bhutan, Maldives) accounts for 30 deaths per 1000 live birth (Gokhale et.al 2004).

Comparing with other developed countries, only a small number of infant mortality occurred in developed country like Australia, as it only has 4,55 deaths per 1000 live birth per year (Hawkins 2011). Additionally, Singapore, which located between Indonesia and Thailand, the infant mortality in this country is quite low since it has only 4,3 deaths per 1000 live births (Bhandari 2012). Those facts revealed the inequity of infant mortality between South East Asian countries and developed countries, since the average of infant mortality rate in South East Asian countries is almost ten times higher than other developed countries (Singapore and Australia). These findings strongly suggest that more attention should be focused on the causes of death in the very young infant, particularly in South East Asian countries.

High prevalence of infant mortality in South East Asian countries mostly caused by several common factors such as lack of nutrition, lack of clean water, inequity of child and maternal health services, low coverage of immunization and medication between urban and rural areas (WHO 2013). Yet, the

maternal education assumed to be one possibilities of the primary obstacles to the promotion of the nation's health, which escalated the prevalence of infant mortality in those region (WHO 2013; Wiryo 2007; Prasilowati 2000). Supporting with that statement, Commision on The Social Determinants of Health (2008) said maternal education assumed to be one of the major social determinant of child health problems.

Mothers play multiple roles in the family that affect health and well being of all family members, including children (Chritiaensen&Alderman 2001; Ekanayake et. al 2003;Caldwell&McDonald 1982). In almost all societies around the world, they are assigned by custom to be the primary caregivers to infants and children, and activities carried out by women such as breastfeeding, preparing food, collecting water and fuel, and seeking preventative and curative medical care are crucial for children's healthy development (Chen&Li 2009). Supporting with this statement, there were several studies reported that education has demonstrated strong link for influencing mother's knowledge about child health, and how she deals with the child health care in a family (Kolahi&Tahmoorodesh 2009; Rowe et al2005). Evidently, Caldwell and McDonald (1982) argued that increasing mother education has significant contribution not only for increasing child health, but also for escalating the quality of population health.

So, it seems an important thing to pay attentions for women education as it assumed to be social determinant of infant mortality in South East Asian countries (Reidpath&Allotey 2003; Sullivan&Sheffrin 2003; King&Zeng 2001).

Thus, aims to explore the influenced of women education to the high prevalence of infant mortality in South East Asian countries, this narrative review will be conducted. The author adopted a narrative approach to undertake the review of studies, which involves synthesizing primary studies in order to explore heterogeneity descriptively rather than statistically (Petticrew & Robert 2006). The review draws on findings from studies conducted in South East Asian countries, in collaboration with grey literature from international organizations reports that will be used to demonstrate that maternal education has also significant influence in child mortality in South East Asian countries.

METHODS

A systematic search of literature was conducted to identify the influenced of maternal education toward infant mortality in South East Asian countries. The following databases were searched : Google Scholar, Scopus, Medline, and PubMed. Hand searches were also conducted to identify the grey literature including searching for publications and reports from the World Health Organization report, World Bank and Commission of the Social Determinant of Health (CSDH) reports. Publications during the period of 10 years from 2001 to 2011 and information related to the maternal education toward infant mortality or child health especially in South East Asian countries were included. Moreover, Primary research and full text article will be preferred to reviewed and there were no restriction on the research design of the articles. On the other hand, publications related to the child poverty in the industrialised world or when they did not mention gender were not included. The following search terms in the table below, were used in combination and/or singly, namely

Table 1. Publi information related to maternal education on infant mortality or child health particularly in Southeast Asian countries.

Gender Layer	Health terms layer	Location Layer
Maternal education OR Maternal literacy OR Wom* education	Infant* OR child* AND Mortality OR health	South East Asian countr* OR India OR Bangladesh OR Indonesia OR Korea OR Bhutan OR Maldives OR Myanmar OR Nepal OR Sri-Lanka OR Thailand OR Timor-Leste

RESULTS AND DISCUSSION

Results

By combining the first two layer (gender and health terms layer), the search yielded 441 result. Then, focusing on the on the specific locations, the Author refined the search by employing the third "location" layer, which yielded 82 result. Finally, it continued to narrow the list of results using the inclusion criteria (literature from 1982 onwards) and to those which published only in English, and included the search terms in the abstract or the subject terms (keywords) since these results were more likely to have most relevance for the literature review. This left a list of 50 articles. The author scanned these results and briefly assessed them to judge their usefulness for the topic in hand. Studies were excluded if they focused on aspects of child poverty in the industrialised world or when they did not mention gender. Others were removed due to duplication. As a result, there were 25 articles which conducted in South East Asian countries and 3 grey literature from WHO report, World Bank and Commission of the Social Determinant of Health report cited in this review.

Based on the articles finding, then author performed manual thematic analysis to obtain themes from the article reviewed. Each article was read several times, analyses and major themes extracted. As a result, there were two major themes and five minor themes found as explained below.

Table 1. Gender and health terms layer

Databases	Wave I (Gender + Health terms layer)	Wave II (Gender + Health term + location layer)	Wave III (All layers +inclusion criteria)	Wave IV (Wave III + exclusion criteria + non-duplication)
Scopus	131	34	16	8
Medline	42	9	9	7
PubMed	122	16	10	7
Google Scholar	146	23	15	3
Total	441	82	50	**25**

Findings

Overview of Women Education in South East Asian countries

Despite the great expansion of educational opportunities worldwide during the past thirty years, women in most South East Asian countries still receive less schooling than men (World Bank 2012). Across the globe, women are less educated and receive worse healthcare than their male counterparts (Quibria 1995; World Bank 2012). Hill (2008) stated better-educated women bear fewer children, who have better chances of surviving infancy, of being healthy,

and of attending school, but when women are deprived of an education individuals, families, and children, as well as the societies in which they live, will be suffered.

Literacy is one of the principal goals of education that has been recognized around the world, and considered as the basic human right (Tembon&Fort 2011). In fact, low literacy rates prevail among women in many South East Asian countries. Genetian et al. (2010) reported in 8 of the 11 South East Asian countries for which school data are available for the 2003, female adult literacy is less than 20%; in none is the male literacy rate as low. However, in Bhutan, Myanmar, and Bangladesh where fewer than 10% of adult women are literate, the percentage of men who are literate is three to four times larger, and among those countries with male literacy rates greater than 70%, the gender gap is notably large in Timor Leste (30%), India (28%), Indonesia (26%), and North Korea(23%), and Nepal (21%) (Gokhale et.al 2004). In contrast, some studies reported that only in particular South East Asian countries such as Thailand, Maldives and Sri Lanka, the literacy rates for men and women are about similar (Tembon&Fort 2003; Hill et al. 2013).

Based on several studies, there are some common constraints in educating women related to social and cultural issues in South East Asian countries (Kishor 2000;Dancer&Rammohan 2009;Fantahun et.al 2006). In some cases, women are socially perceived as less needed education since they were only responsible for the domestic work such as housework and raising children, while men perceived of having more responsibility for public domain therefore they needed more education (Prasilowati 2000;Caldwell&McDonald 1982). Prasilowati (2000) argued some people also believe that it is better to educate men rather than women because married men assume to take social and financial responsibilities for their family as well as their parents. This perception actually becomes a significant social and cultural obstacles when it comes to empowering women, and it affects on less participation rates of girls in formal education and potentially increases the female illiteracy rates across South East Asian countries. Then, the illiterate women potentially will increase their child health problem (Moaweed et. al 2000; Chen &Li 2009).

Maternal education as social determinant of child health

Related to the statement from Commission of The Social Determinants of health (2008) that inequity of women education, has been internationally recognized as the major social determinant of child health and nutrition, there were large body of evidence which demonstrates the strong link between women's education and child survival in South East Asian countries (Caldwell &McDonals 1982; Chen &Li 2009; Gokhale et al. 2004; LeVine 2004; Rowe et al. 2005). Although, there is less research on how or why education makes such a difference, but there is some evidence that more highly educated women could benefit not only from direct access to resources through improved their health knowledge and income earning potential, but also indirect access to resources and decision-making power through women's improved status and bargaining power in the household, in which all of them will positively contribute to the child survival (King&Hill 2003; Ekanayake et al. 2003;Prasilowati 2000).

The following sections will explore in more depth the five aspects of women's education in which all of them influenced the health outcomes for their young children and infants, namely: women status, influence on child health knowledge, traditional approach and willingness to use modern health service, bargaining power, and decision making and access and control over resources,

Women status

Based on UNICEF report (2011, p.14) stated that:

"Women status refers to the position women hold vis-à-vis men in a given community or society which usually mediates their decision making power and ability to access resources within household or the wider community".

Regarding to the women status, several studies has explained the improvement of women status mainly caused by the improvement of women education, in which it affects on increasing their bargaining power within household and it positively contribute to increase their family and child health status (Smith&Haddad 2000;Breierova&Duflo 2002;Maitra 2004).

Influence on Health Knowledge

In spite of women status, women literacy towards health knowledge is becoming an important things for population health, particularly on women and child's health. (Kickbusch 2001). Although, there were less literature explained how women education influenced on increasing their child health, but Glewwe (1999) has explained the rational mechanism between women literacy and child health knowledge. He revealed three links in which women literacy leads to the improvement of child health knowledge. *First*, formal education of women directly transfers health knowledge to future mothers. *Second*, the literacy and numeracy skills that women acquire in school enhance their ability to recognise illness and seek treatment for their children. *Finally*, they are better able to read medical instructions for treatment of childhood illness and apply the treatment for their child.

Wiryo et al. (2007) who conducted study in Indonesia, showed through better literacy, it will have positive impact on escalating women knowledge on child health, since he found that high prevalence of infant mortality rate in Indonesia mostly caused by illiterate mothers who gave early solid food for their newborn in which it foster their baby to get acute intestinal infection.

Moreover, a quantitative study in Nepal by Moawed et al (2000) described that women illiteracy in Nepal accounts for 55% of the total populations, fatally, it caused mothers became unaware of any danger signs in their newborn such as: poor sucking; low birth weight; lethargy; rapid or difficult breathing, which caused high infant mortality in that country.

In contrast, several studies conducted in Nepal by Ayed (2010) and Jan et al. (2000), showed contradictory result that no significant correlation between mother's level of education with safety practices for their children. One possible explanation for this differences in the results could be the use of different research methodology (sample selection, data gathering and others).

Traditional approaches to Health and Willingness to use modern health service

Another impacts of lack of women education for the child health have shown in several studies related to the traditional approaches to health and willingness to use modern health service.

A studies in West Nusa Tenggara province Indonesia performed by Wiryo et al. (2007) reported that most of mothers who lived in rural areas and having less participation in education, may less benefit from education and they are constrained by more rigid traditional structures and norms, since they prefer believing traditional myths that newborn babies should give early solid food (banana or rice) to foster their growth rather than giving exclusive breastfeeding. Thus, it leads to high infant mortality rates in that area. Moreover, the unwillingness to use modern health service is quite high in that area,

since they prefer to bring their sick children to the shamanic healer rather than to the primary health care center provided by the local Government (Wiryo et al. 2007).

While, a qualitative studies in Sri Lanka and South India, resulted that mothers who live in urban areas and having adequate education level, tend to have plugged into different global culture and removed from many constrains of traditional structures of norms, for example: they have enough ability to ensure her children access to health care services and insisting that medical personnel should take action without undue delay (Caldwell&Mc Donald 1982).

Das Gupta's studies (2000) in rural Punjab India also found that maternal education has positively improved child care practices, such as the use of rehydration therapies as well as immunization uptake rather than using traditional herbal medicines.

Financial autonomy and Bargaining Power

Women education also has positive impact on increasing direct access on resources through improved women income and bargaining power (UNICEF 2011). Increased schooling has similar effects on the incomes of males and females, but educating girls generates much larger social benefits because of what women do with the extra income they earn, the extra leverage it affords them within the family, and the direct effects of greater knowledge and awareness has an enormous social impact not only for their health and well-being but also for their family, including their child health and well-being (Brummet 2008). Glick (2002) stated in South East Asian countries especially, women employment should be an essential program to support for child survival.

A number of studies in different context have drawn links between women education and control financial assets and health preventative behaviours for children.

A quantitative study In India (in urban poor areas) by Agarwal and Srivastava (2009) reported that the likelihood of children not receiving vaccinations was significantly associated with a mother's lack of financial autonomy (OR= 0,62, 95%CI= 0,4084-0,9615), and with lack of mother's educational attainment (OR=0,2384, 95%CI= 0,0791-0,7178).

However, a study undertaken in Bangladesh by Rashed et al. (1999) which combining quantitative and qualitative methods demonstrates that women education positively affect on increasing women employment and income in which income in the hands of women may provide better outcomes for children, as it founds that women who were educated and able to earn income were more likely to purchase insecticide-bed-nets which would then be available for children. While, the bed net which had been purchased by the male head of the household were more likely to be used by men themselves as they perceived their own need as greater, given their breadwinning in the household.

Those findings revealed that women education has given greater opportunity for women to have good employment and earning income in which it will positively affect on their child's health outcomes.

Greater autonomy in decision making and access and control over resources

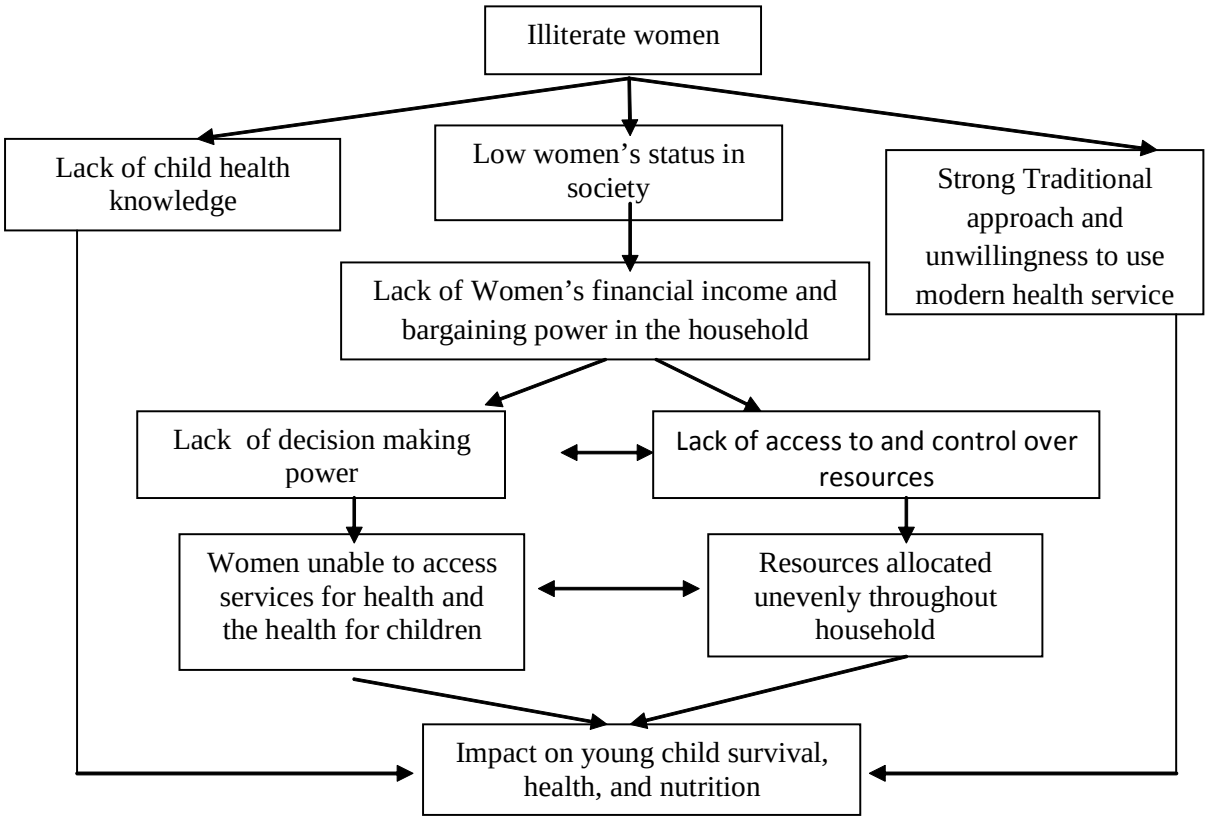
In spite of the fact, that women education has enlarged their view for modern health information and increased their bargaining power through escalating their income earning potential and status in society, education can be considered as resource for women to draw on, which has empowering effects for their own health and well-being as well as assisting them to provide improved care practices for their children and minimizing the risk of child health problem.

Agarwal and Srivastava (2009) argued maternal education correlates significantly with child survival, and there is evidence to suggest that women who are more highly educated have both greater earning power and improved status within the household in which enables them to gain greater decision making for the benefit of their children, and it also increased access to and control over financial resources which affect on the improvements in child nutritional status and health preventative behaviours.

As quantitative study in rural India by Matra (2004) which explored the relationship between women education, decision making power and access and control over resources on use of prenatal care, hospital delivery, and child care, found that improvement of maternal education influenced a unit increase of woman's decision-making power and control over household resources which it resulted in increasing the demand for prenatal care by 40% points and the probability of hospital delivery by 25%, in which both of them contributed significantly to reducing risk of child mortality.

While, a quantitative studies in Myanmar by Fantahun et. al (2006) revealed that women education has significantly impacted on women's involvement in household decision-making and strengthening social capital, as the crucial factors for child survival in Myanmar. Their involvement in the decision-making process in a family has positively affect not only on their ability to access health service for their health and their child's health, but also their ability to allocate evenly the resources throughout household. It also reported that child mortality was around three times higher in families where women were illiterate and had less decision-making power, compared to those where women were educated and had greater decision-making power (Fantahun et. al. 2006).

Discussion



Source: United Nation Children's Fund (UNICEF), 2011

Picture 1. *diagram explained about how is the inequity of women illiteracy across South East Asian Countries influenced high infant mortality in that region*

Based on the findings above, it described that mother plays an important role in determining their child health status, and their level of education has significant impact on their knowledge about child health and how she deals with the child health care issue(Christiansen & Alderman 2008).

In fact, although several studies conducted in Nepal reported there were no associations between women illiteracy and child health (Ayed 2010; Jan et al. 2000), but most of studies convinced that inequality of women education occurred in South East Asian countries, which caused by social and cultural barrier, has positively influenced the high infant mortality prevalence in those region(Genetian et.al 2010; Brummet 2008; Caldwell & McDonald 1982; Tolhurst et al. 2008). Below, there is diagram explained about how is the inequity of women illiteracy across South East Asian Countries influenced high infant mortality in that region.

Based on the diagram above, it is known that women illiteracy became major social determinant of infant mortality in South East Asian countries (CSDH 2008), and there were several mechanism about how women illiteracy influenced infant mortality in South East Asian countries.

First of all, as stated above, women illiteracy influenced the lack of child health knowledge that they have. Several studies revealed that illiteracy made women became unaware for their child health, instead of giving breastfeeding, they prefer to give early solid food for their newly born baby (Wiryo et al. 2007). Moreover, it made them became ignorant from any danger signs of their babies, and just thought it was normal signs and did not need any treatment (Moawed et. al. 2000).

Then, illiteracy made them becoming highly influenced by traditional norms and reluctant to use modern health service, as Wiryo et. al. (2007) said that illiterate mothers tends to bring their babies to go to the shamanic healer rather than primary health care services for their child health treatment, while, in most cases shamanic healer were inappropriate for their babies and it potentially foster for infant mortality (Wiryo et al. 2007; Caldwell & Mc Donald 1982).

However, women illiteracy also influenced their status in the society and ability to earn own income, because by having improper education level, it gives less opportunity for women to have a good employment which it leads to the lack of earning power and status in society (Rashed et al. 1999).

There were enough evidences reported that women who has lack of access to financial assets often associated with low status and lack of bargaining power within the household, in which made them became disable to gain greater access to and control over resources for benefit of their children such as child and infant immunisation (Agarwal &Srivastava 2009; Rashad et al. 1999; Tolhurst et al. 2008). Lack of bargaining power and access and control over resources within household eventually made them became unable to access services for her health their children, and the resources became distributed unevenly within household, in which those factors negatively impact on their child survival (Caldwel&McDonald 1982;King&Hill 2003).

Therefore, from those analysis has convinced that inequality of women education in South East Asian countries has positively contributes to escalating the infant mortality prevalence in this region, and it needs immediate actions to tackle for this health problem because increasing women education not only has positive impact on child survival, but also contribute to increasing population health (Caldwell&McDonald 1982).

CONCLUSIONS AND SUGGESTIONS

To conclude, there were 25 articles and 3 grey literature reviewed regarding to the

influence of maternal education toward infant mortality in South east Asian Countries. The inequality of women education, which occurred in most of South East Asian countries, has significantly influenced the infant health problem in this region, since it became major barrier for mothers to update information about child health knowledge, less empowered to the financial autonomy, less decision making power, and access and control over resources within household, in which those aspects significantly contributes to the less child survival within family. Therefore, closing the gap of women education in South East Asian countries will be a useful program not only reducing infant mortality in this region, but also increasing quality of population health (Caldwell&McDonald 1982). Moreover, it is recommended for the Government and policymaker in this region to make strategic education programs prioritized for women in order to empower them to get better earning power, and improved their status within household in which enabling them to gain greater access and control over resources for the benefit of their children.

BIBLIOGRAPHY

Agarwal, S. & Srivastava, A 2009, 'Social determinants of children's health in urban areas in India', *Journal Of Health Care For The Poor And Underserved*, vol. 20, no. 4 Suppl, pp. 68-89, viewed 22 April 2013, (online PubMed).

Apodaca, C 2008, 'Women's Status and the Alleviation of Child Hunger', *Conference Papers — International Studies Association*, pp. 1-28.

Ashworth A & Waterlow J 1982,' Infant mortality in developing countries', *Arch Disability Child*, vol.**57**, pp.882–884, viewed 23rd May 2013, (online Scopus).

Ayed, S 2010,' Mother's Knowledge of child health matter: are we doing enough?', *Journal of Family Community medicine*, vol. 17, no.1 ,pp. 22-28, viewed 16 April 2013, (online Medline).

Breierova, L. & Duflo, E 2002, *The Impact of Education on Fertility and Child Mortality: Do Fathers Really Matter Less Than Mothers?*, viewed 21 April 201, < http://ideas.repec.org/p/nbr/nberwo/10513.html#provider >.

Brummet, Q 2008,' The Effect of Gender Inequality on Growth: A Cross-Country Empirical Study', *The Park Place Economist*, vol. 16, no. 1, pp. 12-23, viewed 28th may 2013 (online PubMed).

Caldwell, J. & McDonald, P.1982, 'Influence of maternal education on infant and child mortality: levels and causes', *Health Policy And Education*, vol. 2, no. 3-4, pp. 251-267, viewed 16 April 2013 (online PubMed).

Chen, Y. & Li, H. 2009, 'Mother's Education and Child Health: Is There a Nurturing Effect?', *Journal of Health Economics*, vol. 28, no. 2, pp. 413-426, viewed 23 April 2013,(online Scopus).

Chritiaensen, L & Alderman, H 2001, *Child malnutrition in Ethiopia: Can maternal knowledge augment the role of mother*, viewed 14th November 2012, http://www.worldbank.org/wps/index.htm**.**

Dancer DM & Rammohan A 200, 'Maternal Autonomy and Child Nutrition: Evidence From Rural Nepal', *Indian Growth and Development Review*, vol.2, no.1, pp.18-38 viewed 14th May 2013, (online PubMed).

Das Gupta, M 2000, 'Death clusteting, mother's education, and the determinants of child mortality in rural

Punjab, India', *Journal of Population Studies*, vol. 44, pp. 489-505, viewed 15 April, (online PubMed).

Ekanayake, S, Weerahewa, J, &Ariyawardhana, A 2003, *Role of mothers in alleviating child malnutrition: evidence from Sri Lanka*, Final report submitted to International Development Research center, Canada.

Fantahun, M., Berhane, Y., Wall, S., Byass, P. & Högberg, U 2007, 'Women's involvement in household decision-making and strengthening social capital—crucial factors for child survival in Ethiopia', *Acta Paediatrica*, vol. 96, no. 4, pp. 582-589, viewed 14th May 2013, (online Google Scholar).

Gary King & Langche Zeng 2001, *Improving forecasts of state failure*, World Politics, New York.

Gennetian, L., Hill, H.D., London, A., & Lopoo., L 2010,'Maternal employment and the health of low-income young children', *Journal of Health Economics*, vol.29, no.3, pp. 353-363, viewed 14th May 2013, (online PubMed).

Glick, P. & Sahn, D.E 1998, 'Maternal labour supply and child nutrition in West Africa', *Oxford Bulletin of Economics & Statistics*, vol. 60, no. 3, p. 325, viewed 14th May 2013, (online Google Scholar).

Glewwe, P 1999,'Why Does Mother's Schooling Raise Child Health in Developing Countries? Evidence from Morocco', *Journal of Human Resources*, vol. 34, no.1, pp. 124-159, viewed 14th May 2013, (online Google Scholar).

Gokhale, M.K., Kanade, A.N., Rao, S., Kelkar, R.S., Joshi, S.B. & Girigosavi, S.T. 2004, 'Female Literacy: The Multifactorial Influence on Child Health in India', *Ecology of Food & Nutrition*, vol. 43, no. 4, pp. 257-278, viewed 18 April 2013, (online Scopus).

Hill, H.D., Morris, P., Gennetian, L.A., Wolf, S., & Tubbs, C 2013, 'The consequences of income instability for children's well-being', Journal of Child Development Perspectives, vol.7, no.2, pp. 85-90, viewed 14th May 2013, (online PubMed).

Jan MM, Hasanain FH, & Al-Dabbagh AA 2000,' Infant and child safety practices of parents', *Saudi Medical Journal*, vol. 21, pp.1142–1146, viewed 19 April 2013, (online Medline).

Kickbusch, I 2001,'*Health literacy: addressing the health and education divide', Journal of Health Promotion International, vol.*16,*pp.* 289–*297,* viewed 14th May 2013, (online Medline).

Kielman AA, McCord C 1978,' **Weight-for-age as an index of risk of death in children',** *Lancet*, vol.**1,pp.**1247-1250, viewed 23rd May 2013, (online Scopus).

Kishor, S 2000, Empowerment of Women in Egypt and Links to the Survival and Health of their Infants, in H.a.S. Presser, G. (ed.), *Women's Empowerment and Demographic Processes: Moving Beyond Cairo*, Oxford University Press, Oxford.

Kolahi AA & Tahmooresdeh S. 2009,'First febrile convulsions: Inquiry about the knowledge, attitudes and concerns of the patients' mothers', *Europe Journal of Pediatry*, vol168, pp.167–171, viewed 16 April 2013, (online Medline).

LeVine, R 2004, 'Maternal literacy and health behavior: a Nepalese case study', *Social Science & Medicine*, vol. 58, no. 4, pp. 863-877, viewed 18th May 2013, (online Medline).

Maitra, P 2004, 'Parental bargaining, health inputs and child mortality in India', *Journal of Health Economics*, vol. 23, no. 2, pp. 259-291, viewed 23 April, (online Medline).

Moawed SA & Saeed AA 2000,'Knowledge and practices of mothers about infants' diarrheal episodes', *Saudi Medical Journal*, vol. 21, pp.1147–1151, viewed 26 April 2013, (online Medline).

Petticrew M, & Roberts H 2006, *Systematic Reviews in the Social Sciences: A practical guide*, Blackwell Publishing, Oxford.

Prasilowati S 2000, *An Analysis of Women's Educa-tion in Indonesia: Empowerment and Barriers*, International Development Studies, Saint Mary's University, Halifax, Canada, viewed 23rd May 2013,<http://www.collectionscanada.gc.ca/obj/s4/f2/dsk2/ftp01/MQ56719.pdf>.

Quibria, M.G 1995,'Gender and Poverty: Issues and Policies with Special Reference to Asian Developing Countries', *Journal of Economic Surveys*, vol.9 , no. 4, pp. 373-
411, viewed 14th May 2013, (online Scopus).

Rashed, S., Johnson, H., Dongier, P., Moreau, R., Lee, C., Crepeau, R., Lambert, J., Jefremovas, V. & Schaffer, C 1999, 'Determinants of the Permethrin Impregnated Bednets (PIB) in the Republic of Benin: the role of women in the acquisition and utilization of PIBs', *Journal of Social Science Medicine*, vol. 49, no. 8, pp. 993-1005, viewed 20th May 2013, (online Scopus).

Reidpath DD & Allotey P 2003,'Infant mortality rate as an indicator of population health', Journal Epidemiology and Community Health, vol. 57,pp. 344–346, viewed 24th May 2013, (online Scopus).

Rowe, M.L., Thapa, B.K., Levine, R., Levine, S. & Tuladhar, S.K. 2005, 'How Does Schooling Influence Maternal Health Practices? Evidence from Nepal', *Comparative Education Review*, vol. 49, no. 4, p. 512, viewed 15 April 2013, (online Scopus).

Smith, L.C. & Haddad, L 2000, *Explaining child malnutrition in developing countries: A Cross-Country Analysis*, International Food Policy Research Institute, Washington DC.

Sullivan, A. &Sheffrin, S 2003, *Economics: Principles in Action*, Pearson Prentice Hall, London.

The Commission on Social Determinants of Health 2008, Tackling *the Social Roots of Health Inequities*, viewed 23rd May 2013, < http://www.who.int/social_determinants/thecommission/finalreport/en/index.html>.

Tolhurst, R., Amekudzi, Y.P., Nyonator, F.K., Bertel Squire, S. & Theobald, S 2008, 'He will ask why the child gets sick so often": the gendered dynamics of intra-household bargaining over healthcare for children with fever in the Volta Region of Ghana', *Social Science & Medicine*, vol. 66, no. 5, pp. 1106-1117, viewed 22nd May 2013, (online Scopus).

United Nation Children Fund (UNICEF) 2011, *Gender Influences On Child Survival , Health And Nutrition: A*

Narrative Review, viewed 21 April 2013, < http://www.unicef.org/gender/files/Gender_Influences_on_Child_Survival_a_Narrative_review.pdf

Wiryo, H 2007, 'The Effect of Early Solid Food Feeding and The Absence of Colostrum Feeding on Neonatal Mortality', *Tempo Medika*, Vol. 5, viewed 15 March 2012, < http://www.tempo.co.id/medika/arsip/052001/pus-2.htm>.