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The relationship between risk factors and child endangerment

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Abstract

Introduction. The purpose of this study was to examine which of the two models of risk (linear or threshold) suggested from prior research describes best the impact of risk on child endangerment best for toddlers between the ages of two and four years old in the Netherlands. Certain risk factors were investigated: family size, problems of the child, education level, mental illness, single and social isolation and coping strategies of the parents. It was expected that the linear model would describe the impact of risk the best. **Method**. 244 participants, consisting of the pedagogical caregivers of preschools and one parent for every toddler, took part in several questionnaires. Because 81% of the variables had incomplete data, multiple imputation by fully conditional specification (FCS MI) was used to complete the data set. Multiple and logistics regression-analyses were used to examine the models of risks. **Results**. Results confirms that the cumulative risk index predicts child endangerment. None of the risk factor individually predicted child endangerment significantly. Examination comparing the risk groups indicated that relative to the 0-risk group, none of the other risk groups had a significantly greater risk of child endangerment. **Conclusion.** The current research supports the linear risk model. There does not seem to appear a point which beyond children are at greater risk and that every risk factor we can reduce matters.

Introduction

Past research strongly suggests that different risk factors such as poverty, a large family size and a single-mom household have a negative effect on parenting, which can result in child maltreatment. These risk factors are often intergenerational transmissible and because many of these risk factors co-occur, they have to be investigated in the terms of their cumulative effects over time (Widom, Czaja, & DuMont, 2015). Making sense of the cumulative nature of these risk factors, could have important implications for prevention programs. Families with a certain significant risk profile than can be offered help with parenting strategies for example. A cumulative risk approach offers a method for investing how risk factors operate in the context of one another to influence child maltreatment. There are two most dominant models from research on risk factors: a threshold model or a linear model. So far, it is not clear which model which model describes best the impact of risk on child maltreatment (Appleyard, Egeland, Dulmen, & Alan Sroufe, 2005; Jones, Forehand, Brody, & Armistead, 2002; Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998). Because child maltreatment is an important issue in society, this study aims to investigate these two models of cumulative risk on signs of child maltreatment. Signs of child maltreatment will be examined in a sample of parents and their children who visit a centre of early childhood education.

There here are various forms of child maltreatment: sexual abuse, physical abuse, emotional abuse and neglect (Higgins, & McCabe, 2001; Norman, De Byambaa, Butchart, Scott, & Vos, 2012). Sexual abuse occurs when a child is engaged in sexual activities that he or she cannot comprehend, for which he or she is developmentally unprepared and cannot give consent, and/or that violate the law or social taboos of society (Kellogg, 2005). Physical abuse can be defined as any intentional act causing injury or trauma to another person (Gilbert et al., 2009a; MacMillan et al., 2001). Emotional abuse can be defined as any act including confinement, isolation, verbal assault, humiliation, intimidation, infantilization, or any other treatment which may diminish the sense of identity, dignity, and self-worth (Gilbert et al., 2009b; MacMillan et al., 2001). Finally, neglect is the failure to act on the part of the parent/caregiver to fulfil the child's needs (Dufour, Lavergne, Larrivée, & Trocmé, 2008). Existent literature on child development and maltreatment has documented mounting evidence of the negative consequences of maltreatment for child victims, for example depression and anxiety. All these forms of child maltreatment must be taken into account when estimating the child's risk of maltreatment (Gilbert et al., 2009a).

The bio-ecological system model is one of the dominant models in defining risk factors on different levels (Bronfenbrenner & Morris, 2006). The ecological model

conceptualises maltreatment as multiply determined by forces at work in the individual, in the family, and in the community and culture, and suggests that these determinants modify each other (Gilbert et al., 2009b). This model has four different levels: macro system, exosystem, mesosystem and the microsystem. One of the most common risk factors on the level of the mesosystem is the family's SES. Strong associations have been found between low income, a low education level and child neglect. Parents with a low education level often live more in poverty than parents with a high education level. Those parents aren't able to fulfil the child's needs, simply because they don't have the financial resources. According to literature, a low education level of the parents can also be seen as one of the risk factors for child maltreatment, in particularly child neglect (Gershoff, 2002; Hildyard, & Wolfe, 2002; Slack, Holl, McDaniel, Yoo, & Bolger, 2004).

Another important risk factor on the level of the mesosystem is family size, with higher risk on child maltreatment in larger families (Bronfenbrenner & Morris, 2006). Studies have found an association between the number of children in the family household and child maltreatment, especially neglect. With the care of a large family household, the family household can be chaotic and may not be able to fulfil the needs of all children. With this in mind, a large family household is a risk factor for child maltreatment (Almuneef, Alghamdi, & Saleheen, 2016; Sidebotham, Heron, & ALSPAC Study Team, 2006). Another possible risk factor on this level is a single household, in which the father/mother is absent from the family live. Single, separated or divorced parents have been found to use more corporal and harsh punishment with their children then married parents. This connection has been related to stress: single moms experience more life stress than mother in intact families, and this stress in turn is associated with more harsh discipline. Thus, a single household can negatively affect child maltreatment (Gershoff, 2002; Loeber et al., 2000).

Research also has shown that mental illness and lack of copings strategies of the parents is also associated with child maltreatment (Bronfenbrenner & Morris, 2006). This is also on the level of the mesosystem, because mental illness and lack of copings strategies of the parents are stable characteristics which interact with children. It has been long known that people with mental disorders, including depression, anxiety, autism etc. lack coping resources for managing challenges of daily live (Taylor, & Stanton, 2007). There are several intervention programs, like Triple P-Positive Parenting Programme, developed to enhance the coping skills of parents in order to prevent child abuse. A side note, Triple P has been under attack lately because there some serious doubts about its effectiveness (Schappin, R. et al., 2014). However, having coping strategies reduces feelings of helplessness, depression and stress

which can prevent child maltreatment. Because both mental illness and lack of copings strategies are often related, both will be taken into account when investigating the risk for child maltreatment (Sanders, Cann, & Markie-Dadds, 2003).

The level of the microsystem refers to situations, in which a child personally interacts with other persons within the context of the family, school or during leisure time with peers (Bronfenbrenner & Morris, 2006). Research has shown that a child's own biology also plays a role in the child's development and can also be an important risk factor for child maltreatment on the level of the microsystem. Research posited that children with a mental/physical disability, development delay or a chronic illness are more likely to be a victim of child abuse. Especially children with difficult temperament are more likely to elicit harsh parenting, even physical abuse. Because children are active participants in the parenting process, children elicit parent behaviour. Parents are more likely to use harsh discipline on children with a lot of tantrums, which can result in physical abuse. Thus, difficult temperament can been seen as a risk for child maltreatment (Gallagher, 2002; Vitaro, Barker, Boivin, Brendgen, & Tremblay, 2006).

Researchers have found that cumulative risk portends numerous negative outcomes for child safety (Evans, Li, & Whipple, 2013; Nair, Schuler, Black, Kettinger, & Harrington, 2003). The cumulative risk hypothesis asserts that the accumulation of risk factors, independent of the presence or absence of particular risk factors, impacts the outcome, such that the greater the number of risk factors, the more clear the indications of child maltreatment are (Rutter, 1979). There are two models of cumulative risk suggested from prior research. A threshold effect and a more linear effect of risk factors on child maltreatment. Studies show different results for child maltreatment, most studies noted a steady increase in problematic outcomes with an increasing number of risk factors (Appleyard et al., 2005; Sameroff et al., 1998). On the other hand, a few studies show a trigger point between risk factors. Both Greenberg, Speltz, DeKlyen, & Jones (2001) and Jones et al. (2002) found dramatic increases beyond three risk factors in the prediction of child maltreatment.

This study aims to investigate two models of cumulative risk suggested from prior research: a threshold effect and a more linear effect of risk factors (Appleyard et al., 2005). For this study the risk of child endangerment of individual children is estimated by professional caregivers working in settings of early childhood education. Child endangerment can be defined as the estimate of a child's risk of maltreatment at the present time (Child Endangerment Law & Legal Definition, 2016). This leads to the following research question: 'which risk model explains the risk on child maltreatment best?'. Most of the research

mentioned above supports not a threshold effect, but an linear model of risk. Thus we can expect a more linear increase in child endangerment adding risk factors. This has led to the following hypothesis for this study: the linear model describes best the impact of risk on child endangerment (Appleyard et al., 2005; Raviv, Taussig, Culhane, & Garrido, 2010).

Method

Participants

The sample for this study was based on a study of the University of Utrecht in collaboration with a Dutch preschool called Spelenderwijs. From the total sample of 615 toddlers, 287 parents have given their permission to be a participate in this research and 250 parents filled in several questionnaires. That means a dropout rate of 53.3%. For six toddlers, the questionnaires were to incomplete to include in the data set. So the total sample consisted of 123 professional caregivers with a mean age of 43.71 (SD = 11.96, 100% woman), 195 parents of the toddlers with a mean age of 37.24 (SD = 8.06, 83.9% woman) and 244 toddlers with a mean age of 3.39 (SD = 0.41).

Screening measures

For the study of the University of Utrecht, the parents and professional caregivers of the toddlers had to fill in several questionnaires. The parents of the toddlers filled in Strength and Difficulty Questionnaire and a questionnaire about Social Demographics. The reliability, the internal and external validity of the Strength and Difficulty Questionnaire is assessed with a sufficient to good (Diepenmaat, Eijsden, Janssens, Loomans, & Stone, 2014). The questionnaire about Social Demographics is recently developed. Also the professional caregivers had to fill the Dutch version of the Screening Tool for Child Endangerment Risk (version infants and preschool children) (Fischer et al., 2011).The purpose of this screening tool is identifying the present risk factors associated with maltreatment. The professional caregivers also had to make an estimate of the risk of child maltreatment at the present time by filling in this screening tool (Dominik, 2015). The reliability and the validity of this questionnaire is being examined at the moment, so there aren't COTAN-assessments available yet. This study hopes to contribute to the validity of this questionnaire.

Risk factors

Poverty. Based on prior research, poverty of the family household was taken into account for being a potential influential risk factor for child maltreatment. Poverty was

identified from the Strength and Difficulty Questionnaire with the question 'do you live in poverty?' Participants received an 0 when answering no, and a 1 when answering yes.

Highest received education. Highest received education was identified from the Social Demographics Questionnaire. A low education is defined as only middle school with no following education as coded 1 and a higher education is defined as high school or a follow up education program as coded 0.

Family size. Information of the size of the family was retrieved by the Social Demographics Questionnaire. A large family size is according to Central Plan Bureau in The Netherlands a family with four or more children (Central Bureau for Statistics, 2015). Participants had to fill in the number of children in the family household, on an ordinal scale. These scores are transformed in to a dichotomized variable, with one to three children as a normal family size coded 0 and a family with four or more children is being defined as a large family size coded 1.

Single household and social isolation. A single household was identified by the Strength and Difficulty Questionnaire . The question 'are you a single and don't have any personal contact with other people (family, friends, neighbours etc.)?' can be answered with yes or no. This was measured on a nominal scale level, with no coded 0 and yes coded 1.

Problems. Five question from the Strength and Difficulty Questionnaire were combined into one variable including difficult temperament, diagnostic behavioural disorder, physical/intellectual disability, a developmental delay or a chronical illness of the toddler. Using recode into different variables in SPSS 24.0, these five question are coded in 0 or 1. If the answer on one or more of these five questions is a yes, the participant receive ad 1 on the new variable 'problems'. The participants who answered no on each of these five questions received a 0.

Coping strategy. From the Strength and Difficulty Questionnaire coping strategies of the parents in dealing with stress was measured. Participants had to fill in yes or no on the following question: 'when you are feeling stressed, do you have a strategy to cope with this stress?'. A yes was recoded as 0 and a was recoded as 1. That way not having a coping strategy is a risk factor for child endangerment.

Mental Disorder. Parents had to fill in if they have being diagnosted with a mental disorder in the Strength and Difficulty Questionnaire with the following question 'Are you or your partner diagnosed with a mental disorder or are or were you being psychological treated?

Outcome measures

Child Endangerment. Child endangerment was measured by the Screening Tool for Child Endangerment Risk, which was filled in by the professional caregivers. The question 'How high do you estimate the child's risk of maltreatment at the present time?' could answered with five options: very low, low, rather low, high, very high. Very low, low and rather low was transformed and recoded in a new variable 'no risk', coded 0, and high and very high are transformed into a new variable 'present risk', recoded 1. That way logistic regression analysis was used analysing this data.

Cumulative risk index

Consistent with the literature on cumulative risk (Appleyard et al., 2005; Bagner, & Graziano, 2013), six risk variables were transformed into dichotomous variables with a score of 1 indicating a present of risk and 0 indicating no risk. There were four primary areas of risk: socioeconomic disadvantage (low education level), family structure (family size and single-parent household), parental risk characteristics (coping strategies and mental disorders) and child risk characteristics. The primary areas and the specific variables were based on previous research, also described in the introduction of this study. The data is analysed using (logistic) regression to see which risk factors significantly predict child endangerment. After that, the cumulative risk for each participant was calculated by summing the six dichotomized variables. To examine the threshold model, participants were divided into risk factor groups. Because not many participants had three or more risk factors, the participants were divided into three groups. The first group had one risk factor, the second group had two and the third group had three or more risk factors.

Data-analyse

In the data base of this study, 81% of the variables had incomplete data. Missing data are common in social research. The nonresponse or missingness can be a threat to the validity of the research. Multiple imputation (MI) is an analytical methods that is taking hold in social research. MI imputes values for each missing item and creates a completed data set by repeatedly drawn values from conditional probability distributions. MI is applied to risk factor measures and outcome measures which includes nine variables total (Donders, van der Heijden, Stijnen, & Moons, 2006). Five is chosen for the number of imputation, that means missing data is created by five different plausible imputed data sets and appropriately combing results obtained from each of them. In SPSS the automatic method was used, which

means that SPSS decided which imputation model will be applied to the data. The data set includes both categorical and continuous variables. SPSS chooses multiple imputation by fully conditional specification (FCS MI) for this data set. FCS MI assumes that data is missing at random (MAR) and there is no pattern in missing data. After FCS MI, first the cumulative risk model was examined. After that the linear model and the threshold model were examined via multiple and logistic regression. All analyses will be conducted using SPSS 24.0.

Results

Multiple imputation

In SPSS the automatic method is used, which means that SPSS decided which imputation model will be applied to the data. The data set included both categorical and continuous variables. Therefore multiple imputation by fully conditional specification (FCS MI) is used by SPSS. FCS MI assumed that the data is missing at random (MAR) and there is no pattern in missing data. Especially the dependent variable child endangerment had a lot of missing values, 36% of the values were missing. The result of this MI process is valid statistical inferences that properly reflect the uncertainty due to the missing values (Royston, 2004). Imputed data must be carefully interpret, see the discussion part for more detailed information. The further results of the analysis are based on the imputed data set. In Table 1 the results of the number of missing values for each variable and imputed values can be found. The factor coping strategies for example had 12 missing values in the data set, which was imputed five times by SPSS. The number of imputed values is 12 times 5, is 60 imputed values. The descriptive statistics of the imputed data set can be found in Table 2.

Table 1

The number of missing values and the number five times imputed values

	Missing Values	Imputed Values
Child endangerment	88	440
Child problems	4	20
Coping strategies	12	60
Family size	53	265
Highest percieved education	4	20
Mental disorders	92	460

Poverty	5	25
Single and socially isolated	85	425

Table 2|

Descriptive Statistics

	M	*SD*	*Min*	*Max*	*N*
Child endangerment	0.17	0.38	0.00	1.00	244
Copingstrategies	0.48	0.38	0.00	1.00	244
Education level	0.06	0.24	0.00	1.00	244
Family size	0.50	0.36	0.00	1.00	244
Mental Disorders	0.03	0.30	0.00	1.00	244
Problems	0.19	0.40	0.00	1.00	244
Single and socially isolated	0.10	0.30	0.00	1.00	244

Testing the overall model and the linear risk model

First, the overall cumulative risk index was being tested before specified into a linear or threshold model. Regression analyses were conducted to examine the relation between the cumulative risk score and child endangerment. Prior to interpreting the results, several assumptions were evaluated. The assumption of normality, linearity and homoscedasticity of residuals were met. The cumulative risk index was significantly associated with child endangerment ($F(1, 242) = 13.11$, $p < .001$). This means that the more risk factors are present, the higher the risk on child endangerment. The cumulative risk index explains 4.7% (Adjusted $R^2 = .047$) of the variance, as shown in Table 3. Because the cumulative risk score is significant, the next step was to examine if the association between the cumulative risk index and child endangerment is linear or more threshold.

Table 3.

Regression Results of Risk Factors on Child Endangerment

	Coefficients[a]		
	B	*β*	*t*
Constant	0.49	.014	.685
Child Problems	-.027	.137	-.091
Copingstrategies	.123	-.223	.356
Education level	.314	.264	.670
Family size	,102	-.069	1.312
Mental Disorders	.124	.154	1.135
Single and socially isolated	0.10	.134	.071
F	13.11		
R^2	.047		
Adjusted R^2	.051		

Analyses on individual risk factors indicated that child endangerment was not significantly predicted by any of the risk factors individually, as results have shown in table 3. Unstandardized (*B*) and standardised (*β*) regression coefficients and t values are reported in table 3. These results are in line with the linear risk model that states that no individual risk factor significantly contributes to the outcome, but the sum of the risk factors does.

Testing the Threshold Model

To test the threshold model, participants were divided into risk factor groups by using Recode Into Different Variables in SPSS. The first group had no risk factors (*n = 11*), the second and largest group had just one risk factor (*n = 138*), the third group had two risk factors (*n = 70*) and the third group had three or more risk factors (*n = 25*). Logistic regression were conducted to evaluate the threshold effect between the number of risks and child endangerment using the risk scores. As seen in Table 4, examination comparing the risk groups indicated that relative to the 0-risk group, none of the other risk groups had a significantly greater risk of child endangerment. The >3-risk group did not had a significantly greater risk of child endangerment (odds ratio = 0.000, *p* = .999). This finding suggests that there is not a threshold effect on child endangerment. This indicates that families with three or

more risk factors were not more likely to endanger a child compared to families with no risk factors.

Table 4

Logistic Regression Results Predicting Child Endangerment (n = 244)

	b	SE (b)	*p*	*Exp(B)*
Constant	-.195	.630	.762	.823
0-risks (n = 11)	-9.105	1487.64	.999	.000
1-risk (n = 138)	6.206	1.010	.974	.002
2-risk (n = 70)	-1.191	8871.46	.762	.304
>3-riks (n = 25)	9.105	8871.49	.999	.000

Discussion

The aim of this study was to investigate the cumulative risk on child endangerment. Consistent with earlier research, this study found significant results for a linear cumulative risk model for predicting child endangerment.

First, the cumulative risk index was examined and expected was that the linear model would describe the impact of risk the best. The results of this study are in line with findings from Appleyard and colleagues (2005) and Raviv and colleagues (2010) and confirms the that the cumulative risk index predicts child endangerment. The more risk factors are present, the higher the risk on child endangerment. But none of the risk factor individually that were taken into account in this study predicted child endangerment significantly. This is inconsistent with outcomes that has been observed in literature. For example, Gershoff and colleagues (2002) and Slack and colleagues (2004) found that a low education level of the parents increased the likelihood of child neglect. Also Alumnueef and collegues (2016), Sidebotham and colleagues (2006) demonstrated that a large family size can be a risk factor, because parents with a large family household can't fulfil the needs of all children. Because the cumulative risk index predicted child endangerment and none of the risk factors individually were significant, this study supports the linear risk model.

There does not appear to be a particularly threshold point beyond which the outcome become strikingly worsened. Families with three or more risk factors were not more likely to be endangering a child compared to families with no risk factors. For interventionists, such information might imply that there does not appear to be a 'point of certainty' when indicating

child maltreatment. The results of this study are in line with Appleyard and colleagues (2005) and Raviv and colleagues (2010), who also did not find a threshold effect.

Striking is that in previous research from last year, bachelor students from the University of Utrecht found significant results for certain risk factors, as family size, and child endangerment contrary to the results of this study. These results were in line with the work of Gershoff and colleagues (2002), Slack and colleagues (2004), Alumnueef and collegues (2016) and Sidebotham and colleagues (2006). The conflicting findings between this study and the studies of the other bachelor students may be due to one big difference between the studies, the number missing values. Missing data is common in social research, especially in research with an sensitive subject as child maltreatment. With missing data there is loss of efficiency, complication in data handling and analyses, and bias due to the differences between the observed and unobserved data (Horton, & Lipsitz, 2001). For this study missing values were imputed by SPSS to create a completed data, because the high percentage of missing values. These conflicting results show that analysis of datasets with lots of missing values give an distorted view.

On the other hand, there are some concern with imputing missing values. Although it is a powerful and useful tool, it must be used carefully. Only people with great knowledge of analysis can give advice about this matter. In this study the missing values of the dependent variables were also imputed, but this may not be the best way to predict child endangerment from the risk variables. Lack of knowledge about the process of imputation, may have interfered with the results. Furthermore, other statistical programs like R are more specialized to use complicated statistical techniques for imputing data. Further research is needed with the use of statistical programs like R to examine the missing data and what that means for the results (Little & Rubin, 2014).

There are some limitations to this study. Some of the parents had doubts with the anonymity of the questionnaires. The parents had to hand in the filled questionnaires to the pedagogical caregivers. The aimed population of (n=800) has not been achieved, because of the lack of permission. The parents who may have these risk factors like a mental disorder, and the parents who maltreat their child, may not have hand in there questionnaire and did not give permission. That may explain why the risk factors individually did not predicted child endangerment. In the future, the questionnaires have to be digital so the questionnaires are more anonymous. It is also important that the researchers emphasize that they cannot draw conclusion about the presence of child maltreatment in the family household.

Besides the lack of anonymity, the current study has some other limitations that are important to consider. First, gender was not taken into account in this study. So there cannot be any statements about the effect of gender on child endangerment. However a meta-analytic review of the literature from Sith and collegues (2009) showed that the gender of the child is insignificant in relationship to child maltreatment, like child neglect. Only for sexual abuse, child gender was found significant. In this study there were no cases reported for sexual abuse. When investigating child endangerment, gender may not be so important to take into account because of the lack of significant results from previous studies (Sith et al., 2009).

Another limitations has to do with the concept of child endangerment. In this study child maltreatment could not be measured, only the estimation of the risk of child maltreatment from pedagogical caregivers. Which means that the results of this study depended on the opinions, norms and values of the pedagogical caregivers. Real forms of child maltreatment were never observed. It is possible that the opinion of pedagogical caregivers do not match the truth. Future research would benefit from exploring this important matter. Another suggestion for future research is using a discriminant function analysis to predict the level of child endangerment on the basis of certain risk factors. In this study child endangerment was investigated by a dummy variable. With child endangerment as an level of classification, you may could predict which children are at risk and which are not based on the risk factors.

Despite these limitations and suggestions for future research, the present study contributes to field of research on child endangerment. It is important to study individual risk factors. Given the research on individual risk factors and findings from the current study, the cumulative risk score is a useful way for clinical to identify families at risk of child endangerment as shown in other studies. Although the risk factors individually examined in the current study are not significant, further research is needed to examine how best to intervene in the present multiple risk factors to prevent child endangerment (Appleyard et al., 2005; Bagner, & Graziano, 2013). This study also provides insight into the misleading results studies provided when using incomplete data sets. Because the results of this study on individual risk factors are in contrast with some prior research, more research is needed to investigate this matter. This study shows that every risk factor we can reduce matters when preventing child endangerment.

Literature

Almuneef, M. A., Alghamdi, L. A., & Saleheen, H. N. (2016). Family profile of victims of child abuse and neglect in the Kingdom of Saudi Arabia. *Saudi Medical Journal*, *37,* 882-888. doi:10.15537/smj.2016.8.14654

Appleyard, K., Egeland, B., Dulmen, M. H., & Alan Sroufe, L. (2005). When more is not better: The role of cumulative risk in child behavior outcomes. *Journal of Child Psychology and Psychiatry*, *46*, 235-245. doi:10.1111/j.1469-7610.2004.00351.x

Bagner, D. M., & Graziano, P. A. (2013). Barriers to success in parent training for young children with developmental delay: The role of cumulative risk. *Behavior Modification*, *37*, 356-377. doi:10.1177/0145445512465307

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. *Handbook of Child Psychology*, *14,* 793-828. doi:10.1002/9780470147658.chpsy0114

Central Bureau for Statistics (2015). Family household influences timing of motherhood. Retrieved from https://www.cbs.nl/nl-nl/achtergrond/2014/29/ouderlijk-gezin-beinvloedt-timing-eerste-moederschap on 11th January 2017

Child Endangerment Law & Legal Definition (n.d.). Retrieved from https://www.childwelfare.gov/pubPDFs/define.pdf on 9th January 2017

Diepenmaat, A., Eijsden, M. van, Janssens, J., Loomans, E., & Stone, L. (2014). Accountability SDQ. Amsterdam: GGD Amsterdam and Radboud Universiteit Nijmegen. Retrieved from https://www.hartenzielmonitor.nl/docs/hartenziel-cotan-verantwoording-sdq.pdf on 18th March 2017

Dominik, A., & Wijnroks, A. (2015). Screening Tool for Child Endangerment Risk (version infants and preschool children).

Donders, A. R. T., van der Heijden, G. J., Stijnen, T., & Moons, K. G. (2006). Review: a gentle introduction to imputation of missingvalues. *Journal of Clinical Epidemiology*, *59*, 1087-1091. doi:10.1016/j.jclinepi.2006.01.014

Dufour, S., Lavergne, C., Larrivée, M., & Trocmé, N. (2008). Who are these parents involved in child neglect? A differential analysis by parent gender and family structure. *Children and Youth Services Review*, *30*, 141-156. doi:10.1016/j.childyouth.2007.09.002

Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin*, *139*, 1342-1396. doi:10.1037/a0031808

Fischer, D., Kindler, H., Künster, A. K., Thurn, L., Wucher, A., & Ziegenhain, U. (2011).

Risikoepidemiologie und Kinderschutzstatistik in der frühen Kindheit-eine Pilotuntersuchung. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 60*, 206 223. doi:10.13109/prkk.2011.60.3.206

Gallagher, K. C. (2002). Does child temperament moderate the influence of parenting on adjustment?. *Developmental Review, 22,* 623-643. doi:10.1016/S0273-2297(02)00503-8

Gershoff, E. T. (2002). Corporal punishment by parents and associated child behaviors and experiences: A meta-analytic and theoretical review. *Psychological Bulletin*, *128*, 539-579. doi:10.1037//0033-2909.128.4.539

Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009a). Burden and consequences of child maltreatment in high-income countries. *Lancet*, *373*, 68-81. doi:10.1016/S0140-6736(08)61706-7

Gilbert, R., Kemp, A., Thoburn, J., Sidebotham, P., Radford, L., Glaser, D., & MacMillan, H. L. (2009b). Recognising and responding to child maltreatment. *Lancet*, *373*, 167-180. doi:10.1016/SO140-6736(08)61707-9

Greenberg, M.T., Speltz, M.L., DeKlyen, M., & Jones, K. (2001). Correlates of clinic referral for early conduct problems: Variable- and person-oriented approaches. *Development and Psychopathology, 13,* 255–276. Retrieved from www.cambridge.org on 2th November 2016.

Hildyard, K. L., & Wolfe, D. A. (2002). Child neglect: Developmental issues and outcomes. *Child Abuse & Neglect, 26,* 679-695. doi:10.1016/S0145-2134(02)00341-1

Horton, N. J., & Lipsitz, S. R. (2001). Multiple imputation in practice: Comparison of software packages for regression models with missing variables. *The American Statistician, 55,* 244-254. doi:10.1198/000313001317098266

Jones, D.J., Forehand, R., Brody, G., & Armistead, L. (2002). Psychosocial adjustment of African-American children in single-mother families: A test of three risk models. *Journal of Marriage and Family, 64,* 105–115. doi:10.1111/j.1741-3737.2002.00105.x

Little, R. J., & Rubin, D. B. (2014). Statistical analysis with missing data. New Jersey: John Wiley & Sons.

Loeber, R., Drinkwater, M., Yin, Y., Anderson, S. J., Schmidt, L. C., & Crawford, A. (2000). Stability of family interaction from ages 6 to 18. *Journal of Abnormal Child Psychology, 28*, 353–369. doi:10.1023/A:1005169026208

MacMillan, H. L., Fleming, J. E., Streiner, D. L., Lin, E., Boyle, M. H., Jamieson, E. J., & Beardslee, W. R. (2001). Childhood abuse and lifetime psychopathology in a community sample. *American Journal of Psychiatry*, *158*, 1878-1883. doi:10.1176/appi.ajp.158.11.1878

Nair, P., Schuler, M. E., Black, M. M., Kettinger, L., & Harrington, D. (2003). Cumulative environmental risk in substance abusing women: Early intervention, parenting stress, child abuse potential and child development. *Child Abuse & Neglect*, *27*, 997-1017. doi:10.1016/S0145-2134(03)00169-8

Kellogg, N. (2005). The evaluation of sexual abuse in children. *Pediatrics, 116,* 506-512. doi:10.1542/peds.2005-1336

Raviv, T., Taussig, H. N., Culhane, S. E., & Garrido, E. F. (2010). Cumulative risk exposure and mental health symptoms among maltreated youth placed in out-of-home care. *Child Abuse & Neglect, 34*, 742-751. doi:10.1016/j.chiabu.2010.02.011

Royston, P. (2004). Multiple imputation of missing values. *Stata journal*, *4*, 227-41. Retrieved from http://ageconsearch.umn.edu/bitstream/116244/2/sjart_st0067.pdf on 2th of May 2017.

Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M.W. Kent & J.E. Rolf (Eds.), Primary prevention of psychopathology, Vol.3:Social competence in children (pp. 49–74). Hanover, NH: University of New England Press.

Sameroff, A.J., Bartko, W.T., Baldwin, A., Baldwin, C., & Seifer, R. (1998). Family and social influences on the development of child competence. In M. Lewis & C. Feiring (Eds.), Families, risk, and competence (pp. 161–183). Mahwah, NJ: Erlbaum. Retrieved from http://www.apa.org/ on 2th November 2016.

Sanders, M. R., Cann, W., & Markie-Dadds, C. (2003). The Triple P-Positive Parenting Programme: a universal population-level approach to the prevention of child abuse. *Child Abuse Review, 12,* 155-171. doi:10.1002/car.798

Schappin, R., Wijnroks, L., Venema, M. U., Wijnberg-Williams, B., Veenstra, R., Koopman-Esseboom, C., Mulder-De Tollenaer, S., Tweel, I., & Jongmans, M. (2014). Primary Care Triple P for parents of NICU graduates with behavioral problems: A randomized, clinical trial using observations of parent–child interaction. *BMC Pediatrics, 14,* 305-317. doi:10.1186/s12887-014-0305-4

Sidebotham, P., Heron, J., & ALSPAC Study Team. (2006). Child maltreatment in the "children of the nineties": A cohort study of risk factors. *Child Abuse & Neglect*, *30*, 497-522. doi:10.1016/j.chiabu.2005.11.005

Slack, K. S., Holl, J. L., McDaniel, M., Yoo, J., & Bolger, K. (2004). Understanding the risks of child neglect: An exploration of poverty and parenting characteristics. *Child Maltreatment*, *9*, 395-408. doi:10.1016/j.chiabu.2005.11.005

Stith, S. M., Liu, T., Davies, L. C., Boykin, E. L., Alder, M. C., Harris, J. M., Som A., McPherson M., & Dees, J. E. M. E. G. (2009). Risk factors in child maltreatment: A meta-analytic review of the literature. *Aggression and Violent Behavior*, *14*, 13-29. doi:10.1016/j.avb.2006.03.006

Taylor, S. E., & Stanton, A. L. (2007). Coping resources, coping processes, and mental health. *Annu. Rev. Clin. Psychol.*, *3*, 377-401. doi:2007.3:377-401

Vitaro, F., Barker, E. D., Boivin, M., Brendgen, M., & Tremblay, R. E. (2006). Do early difficult temperament and harsh parenting differentially predict reactive and proactive aggression?. *Journal of Abnormal Child Psychology, 34*, 681-691. doi:10.1007/s10802-006-9055-6

Widom, C. S., Czaja, S. J., & DuMont, K. A. (2015). Intergenerational transmission of child abuse and neglect: Real or Detection Bias?. *Science, 347*, 1480-1485. doi:10.1126/science.1259917