

Literatuuroverzicht Samen Groeien 010 (2022)

Projectplan

'We nemen de relevante literatuur rondom de thema's kwetsbaarheid, kwetsbaar ouderschap en het belang van preconceptie en de eerste 1000 dagen'

Kwetsbaarheid

Ref Medisch Contact

<https://www.medischcontact.nl/nieuws/laatste-nieuws/artikel/een-kwetsbare-zwangere-wat-is-dat-eigenlijk.htm>

Definitie gemeente en Erasmus MC

Wulffraat JM, Blanchette LMG, Bertens LCM, Ernst HE, van der Meer L, de Graaf JP & Steegers EAP. Definitie kwetsbaarheid- zwangere vrouwen. Verkrijgbaar via:

http://www.dvprijnmond.nl/wp-content/uploads/2019/10/003-2019-09-02-Definitie-Kwetsbaarheid_def.pdf

Scheele J, Harmsen van der Vliet-Torij HW, Wingelaar-Loomans EM, Goumans MJB. Defining vulnerability in European pregnant women, a Delphi study. Midwifery. 2020 Jul;86:102708. doi: 10.1016/j.midw.2020.102708. Epub 2020 Apr 5. PMID: 32289596.

Brygger Venø L, Jarbøl DE, Pedersen LB, Søndergaard J, Ertmann RK. General practitioners' perceived indicators of vulnerability in pregnancy- A qualitative interview study. BMC Fam Pract. 2021 Jun 26;22(1):135. doi: 10.1186/s12875-021-01439-3. PMID: 34174822; PMCID: PMC8236135.

Kimla K, Nathanson D, Woolfenden S, Zwi K. Identification of vulnerability within a child and family health service. Aust Health Rev. 2019 Apr;43(2):171-177. doi: 10.1071/AH17024. PMID: 29157354. <https://pubmed.ncbi.nlm.nih.gov/29157354/>

Kwetsbaar ouderschap

Indicatoren kwetsbaar ouderschap

- Psychiatrische aandoening of ernstige psychische klachten inclusief persoonlijkheidsproblematiek bij (aanstaande) ouders 1,2,3,4,5

- (Vroegkinderlijk) trauma of verwaarlozing bij (aanstaande) ouders^{6,7,8}
- Verslaving (cannabis, alcohol, harddrugs) bij zwangere of haar partner^{9,10}
- Ernstige stress^{11,12,13}
- Ernstige angst voor de bevalling ¹⁴
- Belaste obstetrische voorgeschiedenis (bv verlies van een kind, of onverwerkte traumatisch ervaren bevalling)¹⁵
- Foetale aandoening of ernstige obstetrische complicaties¹⁶
- Ongeplande of ongewenste zwangerschap¹⁷
- Tienerzwangerschap¹⁸
- Huiselijk geweld¹⁹
- Relatieproblematiek²⁰
- Verstandelijke beperking²¹

Risicofactoren verwaarlozing en mishandeling

- such as a history of antisocial/criminal offending (22),
- a history of mental/psychiatric problems(22)
- a low educational level. (22)
- Risicofactoren van het microsysteem zijn belangrijker dan risicofactoren van het kind zelf(14)
- Armoede (23)
- Opleiding ouders (23)
- Housing instability (23)
- Food insecurity (23)
- Onverzekerd (23)

1. Yang SW, Kernic MA, Mueller BA, Simon GE, Chan KCG, Vander Stoep A. Association of Parental Mental Illness With Child Injury Occurrence, Hospitalization, and Death During Early Childhood. JAMA Pediatr. 2020 Aug 1;174(8):e201749. doi: 10.1001/jamapediatrics.2020.1749. Epub 2020 Aug 3. PMID: 32568391; PMCID: PMC7309091. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7309091/>
2. Hipwell AE, Goossens FA, Melhuish EC, Kumar R. Severe maternal psychopathology and infant-mother attachment. Dev Psychopathol. 2000 Spring;12(2):157-75. doi: 10.1017/s0954579400002030. PMID: 10847622. https://core.ac.uk/reader/15460436?utm_source=linkout
3. Lautarescu A, Craig MC, Glover V. Prenatal stress: Effects on fetal and child brain development. Int Rev Neurobiol. 2020;150:17-40. doi: 10.1016/bs.irn.2019.11.002. Epub 2019 Dec 14. PMID: 32204831.
4. Eyden J, Winsper C, Wolke D, Broome MR, MacCallum F. A systematic review of the parenting and outcomes experienced by offspring of mothers with borderline personality pathology: Potential mechanisms and clinical implications. Clin Psychol Rev. 2016 Jul;47:85-105. doi: 10.1016/j.cpr.2016.04.002. Epub 2016 Apr 21. PMID: 27261413.

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6. Berthelot N, Lemieux R, Garon-Bissonnette J, Muzik M. Prenatal Attachment, Parental Confidence, and Mental Health in Expecting Parents: The Role of Childhood Trauma. *J Midwifery Womens Health*. 2020 Jan;65(1):85-95. doi: 10.1111/jmwh.13034. Epub 2019 Sep 30. PMID: 31566890.
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8. Chamberlain C, Gee G, Harfield S, Campbell S, Brennan S, Clark Y, Mensah F, Arabena K, Herrman H, Brown S; 'Healing the Past by Nurturing the Future' group. Parenting after a history of childhood maltreatment: A scoping review and map of evidence in the perinatal period. *PLoS One*. 2019 Mar 13;14(3):e0213460. doi: 10.1371/journal.pone.0213460. PMID: 30865679; PMCID: PMC6415835.
9. Cataldo I, Azhari A, Coppola A, Bornstein MH, Esposito G. The Influences of Drug Abuse on Mother-Infant Interaction Through the Lens of the Biopsychosocial Model of Health and Illness: A Review. *Front Public Health*. 2019 Mar 12;7:45. doi: 10.3389/fpubh.2019.00045. PMID: 30915325; PMCID: PMC6422866. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6422866/>
10. Rossen L, Hutchinson D, Wilson J, Burns L, A Olsson C, Allsop S, J Elliott E, Jacobs S, Macdonald JA, Mattick RP. Predictors of postnatal mother-infant bonding: the role of antenatal bonding, maternal substance use and mental health. *Arch Womens Ment Health*. 2016 Aug;19(4):609-22. doi: 10.1007/s00737-016-0602-z. Epub 2016 Feb 11. PMID: 26867547.
11. Lautarescu A, Craig MC, Glover V. Prenatal stress: Effects on fetal and child brain development. *Int Rev Neurobiol*. 2020;150:17-40. doi: 10.1016/bs.irn.2019.11.002. Epub 2019 Dec 14. PMID: 32204831.
12. Babenko O, Kovalchuk I, Metz GA. Stress-induced perinatal and transgenerational epigenetic programming of brain development and mental health. *Neurosci Biobehav Rev*. 2015 Jan;48:70-91. doi: 10.1016/j.neubiorev.2014.11.013. Epub 2014 Nov 24. PMID: 25464029.
13. Wu Y, Lu YC, Jacobs M, Pradhan S, Kapse K, Zhao L, Niforatos-Andescavage N, Vezina G, du Plessis AJ, Limperopoulos C. Association of Prenatal Maternal Psychological Distress With Fetal Brain Growth, Metabolism, and Cortical Maturation. *JAMA Netw Open*. 2020 Jan 3;3(1):e1919940. doi: 10.1001/jamanetworkopen.2019.19940. PMID: 31995213; PMCID: PMC6991285
14. Golmakani N, Gholami M, Shaghaghi F, Safinejad H, Kamali Z, Mohebbi-Dehnavi Z. Relationship between fear of childbirth and the sense of cohesion with the attachment of pregnant mothers to the fetus. *J Educ Health Promot*. 2020 Oct 30;9:261. doi: 10.4103/jehp.jehp_46_20. PMID: 33282966; PMCID: PMC7709774.
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19. Zou S, Zhang Y, Cao Y, Zhang Y. Correlation of maternal abuse during pregnancy with infant temperament and development. *Arch Dis Child.* 2015 Oct;100(10):938-43. doi: 10.1136/archdischild-2013-305450. Epub 2015 Jun 22. PMID: 26101432.
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23. Hunter AA, Flores G. Social determinants of health and child maltreatment: a systematic review. *Pediatr Res.* 2021 Jan;89(2):269-274. doi: 10.1038/s41390-020-01175-x. Epub 2020 Sep 25. PMID: 32977325

Preconceptie

- Foliumzuur en micronutrienten berschermend (Syst rev, Li)
- Maternaal gewicht (Dean)
- Interventies leiden tot betere inname foliumzuur en minder binge-drinking (Sijpkens)
- Vrouwen hebben gemengde gevoelens bij preconceptie zorg rondom chronische ziekte (Steel non syst)

Li M, Francis E, Hinkle SN, Ajjarapu AS, Zhang C. Preconception and Prenatal Nutrition and Neurodevelopmental Disorders: A Systematic Review and Meta-Analysis. *Nutrients.* 2019 Jul 17;11(7):1628. doi: 10.3390/nu11071628. PMID: 31319515; PMCID: PMC6682900.

Daly M, Kipping RR, Tinner LE, Sanders J, White JW. Preconception exposures and adverse pregnancy, birth and postpartum outcomes: Umbrella review of systematic reviews. *Paediatr Perinat Epidemiol.* 2022 Mar;36(2):288-299. doi: 10.1111/ppe.12855. Epub 2021 Dec 30. PMID: 34970757.

Sijpkens MK, van Voorst SF, Rosman AN, de Jong-Potjer LC, Denktas S, Koch BCP, Bertens LCM, Steegers EAP. Change in Lifestyle Behaviors After Preconception Care: A Prospective Cohort Study. *Am J Health Promot.* 2021 Jan;35(1):116-120. doi: 10.1177/0890117120927287. Epub 2020 May 20. PMID: 32431156; PMCID: PMC7747029.

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Stephenson J, Heslehurst N, Hall J, Schoenaker DAJM, Hutchinson J, Cade JE, Poston L, Barrett G, Crozier SR, Barker M, Kumaran K, Yajnik CS, Baird J, Mishra GD. Before the beginning: nutrition and lifestyle in the preconception period and its importance for future health. *Lancet.* 2018 May 5;391(10132):1830-1841. doi: 10.1016/S0140-6736(18)30311-8. Epub 2018 Apr 16. Erratum in: *Lancet.* 2018 May 5;391(10132):1774. PMID: 29673873; PMCID: PMC6075697.

Fleming TP, Watkins AJ, Velazquez MA, Mathers JC, Prentice AM, Stephenson J, Barker M, Saffery R, Yajnik CS, Eckert JJ, Hanson MA, Forrester T, Gluckman PD, Godfrey KM. Origins of lifetime health around the time of conception: causes and consequences. *Lancet.* 2018 May 5;391(10132):1842-1852. doi: 10.1016/S0140-6736(18)30312-X. Epub 2018 Apr 16. PMID: 29673874; PMCID: PMC5975952.

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Steegers EAP. Understanding preconception health for early life course medicine. *Paediatr Perinat Epidemiol.* 2019 Nov;33(6):503-505. doi: 10.1111/ppe.12597. Epub 2019 Oct 22. PMID: 31637731.

Steegers EA, Barker ME, Steegers-Theunissen RP, Williams MA. Societal Valorisation of New Knowledge to Improve Perinatal Health: Time to Act. *Paediatr Perinat Epidemiol.* 2016 Mar;30(2):201-4. doi: 10.1111/ppe.12275. PMID: 26860446; PMCID: PMC4755131.

Hanson M, Barker M, Dodd JM, Kumanyika S, Norris S, Steegers E, Stephenson J, Thangaratinam S, Yang H. Interventions to prevent maternal obesity before conception, during pregnancy, and post partum. *Lancet Diabetes Endocrinol.* 2017 Jan;5(1):65-76. doi: 10.1016/S2213-8587(16)30108-5. Epub 2016 Oct 12. PMID: 27743974.

Eerste 1000 dagen

ACE

- Onderzoek suggereert een causale relatie tussen kindermishandeling en psychische aandoeningen, druggebruik, suicidiepoging, SOA en riskant seksueel gedrag. (syst rev Norman)

Voeding

- Choline belangrijk voor de hersenontwikkeling (syst rev Derbyshire)
- Voeding is belangrijk (Cunha)
- Voeding tijdens eerste 1000 dagen mogelijk geassocieerd met lange termijn obesitas (non syst rev Mameli)
- Nutrienten en micronutrienten lange termijn invloed (syst rev Abdul Hussein)

Omgeving

- Luchtvervuiling geassocieerd met epigenetische veranderingen en telomere lengte (syst rev Isaevska)
- Luchtvervuiling obv verkeer tijdens zwangerschap is geassocieerd met astma op kinderen adolescentenleeftijd (syst rev, Bettiol)
- Air pollution as an exposure was found to be associated with development/growth (e.g. fetal growth restriction, preterm birth)⁴⁰ and genetic outcomes (e.g. differential DNA methylation determined through meta-analytic evidence)⁵⁷. Phthalate exposure was found to be associated with poor cognitive and behavioral outcomes³ (syst rev Abdul Hussein)

Epigenetic programming

- Eerste 1000 dagen cruciaal voor epigenetische programmering (non syst rev)

Stress/ psychiatrie

- PTSD associatie met laag geboortegewicht (non-syst Cook)
- Stress tijdens de zwangerschap, mn 1^e trim associatie met autism spectrum disorder, obesity, and infantile colic in offspring. (syst rev Caparros)
- meta-analytic studies that observed an association between prenatal maternal stress and low birth weight and preterm labor^{28,59}. One study examined paternal depression during the antenatal and postnatal period and found an association with poor behavioral development in offspring⁶⁸. Another study explored maternal schizophrenia and found it to be linked to attachment insecurity/avoidance in offspring³². (syst rev Abdul Hussein)

Maternaal gewicht

- Within this domain, obesity and overweight during pregnancy were commonly investigated. High maternal BMI and obesity were found to be associated with development/growth (e.g. risk of preterm birth)³⁶ and, according to meta-analysis

results, genetic (e.g. variation in DNA methylation)⁶⁶ and physiological programming (e.g. increased risk of Type II diabetes) (syst rev Abdul Hussein)

- Maternal pre-pregnancy weight is a significant factor in the preconception period with underweight contributing to a 32% higher risk of preterm birth, and obesity more than doubling the risk for preeclampsia, gestational diabetes. Overweight women are more likely to undergo a Cesarean delivery, and their newborns have higher chances of being born with a neural tube or congenital heart defect. (non syst rev DEan)

Maternal smoking

- Maternal smoking during pregnancy was the most common studied exposure in this domain, with six studies exploring its effects on health outcomes through the lifecourse. Through mainly meta-analyses results, smoking was found to be associated with offspring physiology and metabolic outcomes (i.e. wheeze and asthma²⁷ and childhood adiposity⁵⁵), development/growth outcomes, specifically birth defects (i.e. cleft lip, cleft palate⁷⁵, and anorectal malformations⁷⁸), and genetic outcomes (i.e. differential DNA methylation⁴⁵). (syst rev Abdul Hussein)

Sociale factoren

- Studies in this domain explored factors such as exposure to adversity during pregnancy (e.g. abuse, neglect, trauma, household dysfunction), parent education, race, income, occupation, and behavioral factors. Exposure to childhood adversity was associated with delays in cognitive development, asthma, infection, and sleep disruptions⁶⁰. One meta-analysis reported parent education and race (White and Asian) to be associated with increased risk of autism⁷³ (syst rev Abdul Hussein)

Resilience

- maternal dietary-related items (i.e. fish, tea)^{31,52,70}; dietary interventions, micronutrient supplementation (established through a meta-analysis) such as vitamin D, iron folate, and fish oil supplements^{38,63,67};
- breastfeeding compared to formula (exclusive vs. any)⁵⁸
- physical activity in pregnancy⁶¹. (syst rev Abdul Hussein)

Norman RE, Byambaa M, De R, Butchart A, Scott J, Vos T. The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS Med.* 2012;9(11):e1001349. doi: 10.1371/journal.pmed.1001349. Epub 2012 Nov 27. PMID: 23209385; PMCID: PMC3507962.

Derbyshire E, Obeid R. Choline, Neurological Development and Brain Function: A Systematic Review Focusing on the First 1000 Days. *Nutrients.* 2020 Jun 10;12(6):1731. doi: 10.3390/nu12061731. PMID: 32531929; PMCID: PMC7352907.

Isaevska E, Moccia C, Asta F, Cibella F, Gagliardi L, Ronfani L, Rusconi F, Stazi MA, Richiardi L. Exposure to ambient air pollution in the first 1000 days of life and alterations in the DNA

methyloome and telomere length in children: A systematic review. *Environ Res.* 2021 Feb;193:110504. doi: 10.1016/j.envres.2020.110504. Epub 2020 Nov 20. PMID: 33221306.

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Bettiol A, Gelain E, Milanesio E, Asta F, Rusconi F. The first 1000 days of life: traffic-related air pollution and development of wheezing and asthma in childhood. A systematic review of birth cohort studies. *Environ Health.* 2021 Apr 17;20(1):46. doi: 10.1186/s12940-021-00728-9. PMID: 33865406; PMCID: PMC8053261.

Mameli C, Mazzantini S, Zuccotti GV. Nutrition in the First 1000 Days: The Origin of Childhood Obesity. *Int J Environ Res Public Health.* 2016 Aug 23;13(9):838. doi: 10.3390/ijerph13090838. PMID: 27563917; PMCID: PMC5036671.

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Cook N, Ayers S, Horsch A. Maternal posttraumatic stress disorder during the perinatal period and child outcomes: A systematic review. *J Affect Disord.* 2018 Jan 1;225:18-31. doi: 10.1016/j.jad.2017.07.045. Epub 2017 Jul 27. PMID: 28777972.

Caparros-Gonzalez RA, Torre-Luque A, Romero-Gonzalez B, Quesada-Soto JM, Alderdice F, Peralta-Ramírez MI. Stress During Pregnancy and the Development of Diseases in the offspring: A Systematic-Review and Meta-Analysis. *Midwifery.* 2021 Jun;97:102939. doi: 10.1016/j.midw.2021.102939. Epub 2021 Feb 23. PMID: 33647755.

Abdul-Hussein A, Kareem A, Tewari S, Bergeron J, Briollais L, Challis JRG, Davidge ST, Delrieux C, Fortier I, Goldowitz D, Nepomnaschy P, Wazana A, Connor KL. Early life risk and resiliency factors and their influences on developmental outcomes and disease pathways: a rapid evidence review of systematic reviews and meta-analyses. *J Dev Orig Health Dis.* 2021 Jun;12(3):357-372. doi: 10.1017/S2040174420000689. Epub 2020 Aug 4. PMID: 32746960.

Dean SV, Lassi ZS, Imam AM, Bhutta ZA. Preconception care: nutritional risks and interventions. *Reprod Health.* 2014 Sep 26;11 Suppl 3(Suppl 3):S3. doi: 10.1186/1742-4755-11-S3-S3. Epub 2014 Sep 26. PMID: 25415364; PMCID: PMC4196560.

Professionals: faciliterende en belemmerende factoren in signaleren, bespreekbaar maken en samenwerking

Brygger Venø L, Pedersen LB, Søndergaard J, Ertmann RK, Jarbøl DE. Assessing and addressing vulnerability in pregnancy: General practitioners perceived barriers and facilitators - a qualitative

interview study. BMC Prim Care. 2022 Jun 3;23(1):142. doi: 10.1186/s12875-022-01708-9. PMID: 35659201; PMCID: PMC9164392.

Ginn C, Benzie KM. Struggling With Reciprocity and Compassion: Mentoring Pregnant and Parenting Mothers Experiencing Vulnerability. Qual Health Res. 2020 Mar;30(4):504-517. doi: 10.1177/1049732319855961. Epub 2019 Jun 16. PMID: 31204572.

Integrated care

Harmsen van der Vliet-Torij HW, Venekamp AA, van Heijningen-Tousain HJM, Wingelaar-Loomans E, Scheele J, de Graaf JP, Lambregtse-van den Berg MP, Steegers EAP, Goumans MJB. Development of a Blueprint for Integrated Care for Vulnerable Pregnant Women. Matern Child Health J. 2022 Mar;26(3):451-460. doi: 10.1007/s10995-021-03340-y. Epub 2022 Jan 9. PMID: 35000072; PMCID: PMC8917045.

Willemijn Looman, Verena Struckmann, Julia Köppen, Erik Baltaxe, Thomas Czepionka, Mirjana Huic, Janos Pitter, Sabine Ruths, Jonathan Stokes, Roland Bal, Maureen Rutten-van Mölken,

Drivers of successful implementation of integrated care for multi-morbidity: Mechanisms identified in 17 case studies from 8 European countries, Social Science & Medicine, Volume 277,2021 <https://doi.org/10.1016/j.socscimed.2021.113728>.

van der Hulst M, de Groot MW, de Graaf JP, Kok R, Prinzie P, Burdorf A, Bertens LCM, Steegers EAP. Targeted social care for highly vulnerable pregnant women: protocol of the Mothers of Rotterdam cohort study. BMJ Open. 2018 Mar 16;8(3):e020199. doi: 10.1136/bmjopen-2017-020199. PMID: 29549208; PMCID: PMC5857660.

Perinatale ziekte

Advies Stuurgroep zwangerschap en geboorte. Een goed begin: veilige zorg rondom zwangerschap en geboorte. Utrecht, december

2009.<https://www.rijksoverheid.nl/documenten/kamerstukken/2009/12/30/een-goed-begin-veilige-zorg-rond-zwangerschap-en-geboorte>

Bonsel GJ, Birnie E, Denktas S, Poeran J, Steegers EAP. Signalementstudie Zwangerschap en Geboorte: Lijnen in de Perinatale Sterfte. Erasmus MC, Rotterdam, 2010.

Handreikingen en richtlijnen

https://www.kennisnetgeboortezorg.nl/wp-content/uploads/2019/06/KNOV_Handreiking_kwetsbare_zwangeren_versie_FINAL.pdf

<https://www.venvn.nl/richtlijnen/alle-richtlijnen/richtlijn-kwetsbaarheid-eerste-1000-dagen/> (concept)

<https://www.flipsnack.com/98D78C6D75E/nvog-visiedocument-2019.html> (visiedocument NVOG, zie onder preventie)

Handreiking kinderwens en ouderschap bij verstandelijke beperking

<https://www.kennispleingehandicaptensector.nl/gehandicaptensector/media/images/Thema's/Kinderwens%20en%20ouderschap/kinderwens-mee-signaal.pdf>

Handreiking KOPP-kinderen

<https://assets.trimbos.nl/docs/8d01ac56-f20a-4ca3-9899-19f12d3f433d.pdf>

Handreiking prenataal huisbezoek in kwetsbare situatie (NIJ)

<https://assets.ncj.nl/docs/39a45143-cd40-4fe7-a5de-dde1ed64f84b.pdf>

Born in Brussel

<https://www.zorgneticuro.be/artikel/inzetten-op-preventie-en-geintegreerde-zorg-voor-kwetsbare-zwangeren#:~:text=In%20Brussel%20worden%20elk%20jaar,%C3%A9n%20voor%20hun%20ongeboren%20kind.>

Factoren genoemd door experts

Kwetsbaarheid

A vulnerable pregnant woman is a woman who is threatened by physical, psychological, cognitive and/or social risk factors in combination with lack of adequate support and/or adequate coping skills .

(Scheele J, Harmsen van der Vliet-Torij HW, Wingelaar-Loomans EM, Goumans MJB. Defining vulnerability in European pregnant women, a Delphi study. Midwifery. 2020 Jul;86:102708. doi: 10.1016/j.midw.2020.102708. Epub 2020 Apr 5. PMID: 32289596.)

Kwetsbaarheid vloeit voort uit een disbalans tussen risicofactoren en beschermende factoren.

Een zwangere is *zeer kwetsbaar* als er een of meerdere risicofactoren zijn waarbij onmiddellijke actie noodzakelijk is, zoals huiselijk geweld of verslavingsproblematiek. De zorg- of hulpverlener moet direct toeleiden naar de juiste zorg en begeleiding om de negatieve invloed van de situatie op de zwangerschap te minimaliseren. Een zwangere is *kwetsbaar* als er een of meerdere risicofactoren aanwezig zijn en de beschermende factoren ontoereikend zijn. Zorg en ondersteuning op maat is nodig om de negatieve invloed van de risicofactoren te verminderen en de zelfredzaamheid van de vrouw te vergroten. Een zwangere is *potentieel kwetsbaar* wanneer er risicofactoren aanwezig zijn, maar de beschermende factoren op dat moment toereikend zijn. Er wordt besproken of de vrouw ondersteuning wenst te ontvangen. Als risicofactoren geen rol spelen en beschermende factoren toereikend zijn om eventuele toekomstige risicofactoren op te vangen, beschouwen we een zwangere als *zelfredzaam*.

<https://www.medischcontact.nl/nieuws/laatste-nieuws/artikel/een-kwetsbare-zwangere-wat-is-dat-eigenlijk.htm>

Zoekstrategie voor Embase.com:

(smoking/mj/exp OR 'alcohol consumption'/mj/exp OR 'mental stress'/mj OR 'social environment'/mj OR 'home environment'/mj OR neighborhood/mj/exp OR 'residence characteristics'/mj OR 'folic acid'/mj OR 'healthy food access'/mj OR 'drug abuse'/mj OR 'maternal obesity'/mj OR poverty/mj/exp OR sociodemographics/mj OR 'child parent relation'/mj/exp OR 'child abuse'/mj/exp OR 'smoking cessation'/exp/mj OR (smoking OR ((smoke OR nicotin*) NEAR/3 expos*) OR cigarette* OR tobacco OR ((alcohol* OR drug OR cocaine OR marijuana OR lsd) NEAR/3 (drinking OR use OR abuse OR consumption*)) OR ((mental* OR psychosoc* OR psycholog*) NEAR/3 (stress* OR distress*)) OR ((social OR home) NEXT/1 environment*) OR neighborhood* OR neighbourhood* OR (residen* NEAR/3 characteristic*) OR folic-acid OR folate* OR (healthy NEXT/1 (food OR eating OR behav*)) OR ((maternal* OR Paternal* OR parent* OR mother* OR father* OR periconcept* OR preconcept* OR postconcept* OR peripregnan* OR prepregnan* OR postpregnan* OR peri-natal* OR pre-natal* OR post-natal* OR peri-concept* OR pre-concept* OR post-concept* OR peri-pregnan* OR pre-pregnan* OR post-pregna*) NEAR/3 (obes* OR overweight* OR bmi OR body-mass-index OR diet* OR nutrition* OR malnutrition* OR overnutrition* OR weight)) OR poverty* OR sociodemographic* OR (child NEAR/6 (parent* OR father* OR mother*) NEAR/6 relation*) OR (child* NEXT/1 (abuse OR neglect*))) :ti) AND ('perinatal period'/exp OR 'prenatal period'/de OR periconception/de OR 'pregnant woman'/de OR 'prepregnancy care'/de OR 'prenatal care'/de OR 'maternal care'/de OR (perinatal* OR prenatal* OR postnatal* OR periconcept* OR preconcept* OR postconcept* OR peripregnan* OR prepregnan* OR postpregnan* OR peri-natal* OR pre-natal* OR post-natal* OR peri-concept* OR pre-concept* OR post-concept* OR peri-pregnan* OR pre-pregnan* OR post-pregnan* OR (prior NEAR/3 (conception* OR pregnan*)) OR (pregnant NEXT/1 (woman OR women))) :ab,ti) AND ('childhood obesity'/de OR 'cardiovascular disease'/exp OR 'lung disease'/exp OR 'brain development'/de OR 'developmental delay'/de OR 'congenital disorder'/de OR 'congenital malformation'/de OR 'intrauterine growth retardation'/de OR 'low birth weight'/exp OR 'immature and premature labor'/exp OR (((child* OR offspring* OR neonat* OR infant*) NEAR/3 (obes* OR overweight* OR bmi OR advers* OR intelligen* OR birth-weight)) OR ((cardiovascul* OR lung OR pulmonar*) NEAR/3 (disease*)) OR ((brain OR neurolog* OR physical* OR cognit*) NEAR/3 development*) OR neurodevelopment* OR neurocognit* OR (development* NEAR/3 delay*) OR (congenital* NEAR/3 (anomal* OR abnormal* OR disorder* OR malform*)) OR birth-defect* OR intrauterine-growth* OR iugr OR small-for-date* OR small-for-gestation* OR (low* NEXT/1 (birth-weight OR birthweight)) OR lbw OR elbw OR vlbw OR ((premature OR preterm* OR pre-term*) (labor OR labour OR birth OR childbirth))) :ab,ti) AND ('systematic review'/exp OR 'meta analysis'/de OR (systematic*-review* OR meta-analy*) :ab,ti) NOT [conference abstract]/lim AND [english]/lim