

Statistical analysis plan – A controlled trial investigating the effects of mindfulness

Inclusion criteria: All pregnant women who had registered at one of the 63 antenatal clinics in Stockholm County between 2016-11-01 and 2018-01-31 were eligible for the study.

Exclusion criteria: Multiple pregnancies.

Causal factors: The 63 antenatal clinics were randomized to two groups, one designated as the Mindfulness group, the other as the Standard-care group. Midwives at the clinics in the Mindfulness group employed the Mindfulness method; midwives at the Standard-care clinics continued to employ established methods.

All the women registered at an antenatal clinic practicing standard care belong to the Standard-care group, and all women registered at a clinic practicing Mindfulness belong to the Mindfulness group.

Observation time, primary outcome measures: The women are monitored from gestational week 32+0 onward until the delivery. The primary outcome measure is determined by the baby's Apgar score measured five minutes after birth. The adverse outcome category is defined as an Apgar score under seven. A stillbirth is scored as 0 and thereby included in the adverse outcome category.

Observation time, secondary measures: The women are monitored from gestational week 32+0 onward until the delivery, the secondary outcome measure is determined by the number of times the woman seeks help at an obstetric clinic because of concern with decreased or altered fetal movement

Observation time, tertiary outcome measures: The woman is monitored from gestational week 32+0 onward until the delivery. The tertiary outcome measure is determined by the baby's Apgar score measured five minutes after delivery. The adverse outcome category is defined by an Apgar score less than four. Stillbirth is recorded as Apgar 0 and thereby included in the adverse outcome category. Another tertiary outcome measure is determined by the baby's death at birth or within seven or respectively 27 days after delivery. Tertiary outcome measures include as well small for gestational age (SGA) and being transferred to the neonatal ward after delivery.

Possible maternal confounding factors: Country of birth, age, body mass index (BMI), previous or current illness educational level, employment, tobacco use, parity, previous intrauterine fetal death, assisted fertilization.

Possible child-related factors: Lethal malformation, lethal illness, genetically related illness.

Possible mediating confounding factors: C section, induced delivery.

Analysis procedure: The analyses will follow the *intention-to-treat* principle. Complete-case analyses will be done alongside with analyses on imputed data sets. Imputation will be

carried out when the possibility of confounding is analyzed. The method that we will use is “multiple imputation by chained equations method (MICE)”. A total of 50 imputed data sets with imputed values for missing information of the possible confounding factors will be calculated. The basis of the imputation will be possible confounding factors in which information is at hand. A prevalence ratio (percentage ratio, ratio with the percentage of the adverse outcome category in the Mindfetalness group and Standard-care group, respectively) will be used as the metric of association. Log-binomial regression will be used to model the prevalence ratio when adjusting for possible confounding factors. Log-binomial regression will also provide 95 percent confidence intervals. If a log-binomial model does not converge a modified regression model according to Zou will be employed. Logistical regression, modelling odds ratio, will be considered if the model regression model according to Zou does not converge.

Possible mediating factors: Mediating factors will be studied in two ways: partly by dividing into subgroups and partly by introducing a variable that represents a possible mediating factor into a statistical model. When a possible mediating factor is introduced into the model, the change in the modeled adjusted prevalence ratio will be interpreted as a metric of the relative effect of the mediating factor.

More information: More information can be found in two published articles, see below, as well as in <https://clinicaltrials.gov/ct2/show/NCT02865759?term=R%C3%A5destad&rank=1>.

1: Akselsson A, Georgsson S, Lindgren H, Pettersson K, Rådestad I. Women's attitudes, experiences and compliance concerning the use of Mindfetalness- a method for systematic observation of fetal movements in late pregnancy. *BMC Pregnancy Childbirth*. 2017 Oct 16;17(1):359. doi: 10.1186/s12884-017-1548-5. PubMed PMID: 29037234; PubMed Central PMCID: PMC5644086.

2: Rådestad I, Akselsson A, Georgsson S, Lindgren H, Pettersson K, Steineck G. Rationale, study protocol and the cluster randomization process in a controlled trial including 40,000 women investigating the effects of mindfetalness. *Sex Reprod Healthc*. 2016 Dec;10:56-61. doi: 10.1016/j.srhc.2016.10.004. Epub 2016 Oct 26. PubMed PMID: 27938874.

Stockholm 24 September 2018

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