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Supplementary file

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Supplementary Table 1. Comparison of participant characteristics according to postpartum hemorrhoidal disease in a cross-sectional study conducted in Japan, from May to September 2023 (N = 292)

Variable	HD_no	HD_yes	P value	unadjusted OR (95%CI)
Age(years)	34 (20–57)	33 (22–57)	0.396	-
BMI (kg/m²)	20.4 (16.1–32.9)	20.1 (16.3–30.0)	0.134	-
Birthweight, g	3021 (1430–5040)	3051 (1625–4136)	0.341	-
Labor duration, h	7 (1–48)	7 (2.5–58)	0.404	-
Second-stage duration, min	30 (1–180)	30 (2–240)	0.696	-
History of HD before pregnancy, n (%)				
No	152 (78.8)	41 (21.2)	<0.001	1.00 (Reference)
Yes	37 (38.1)	60 (61.9)		5.97 (3.40–10.64)
Parity, n (%)				
Primiparous	94 (65.3)	50 (34.7)	0.903	1.00 (Reference)
Multiparous	94 (64.4)	52 (35.6)		1.04 (0.62–1.73)
Lifestyle habits, n (%)				
Breakfast consumption				
No	35 (59.3)	24 (40.7)	0.359	1.00 (Reference)
Yes	153 (66.5)	77 (33.5)		0.73 (0.39–1.39)
Subjective constipation				
No	140 (66.0)	72 (34.0)	0.576	1.00 (Reference)
Yes	47 (61.8)	29 (38.2)		1.20 (0.67–2.13)
Exercise during the week				
No	142 (63.4)	82 (36.6)	0.365	1.00 (Reference)
Yes	43 (70.5)	18 (29.5)		0.73 (0.37–1.38)
Perceived adequate dietary fiber intake				
No	118 (67.4)	57 (32.6)	0.314	1.00 (Reference)
Yes	70 (61.4)	44 (38.6)		1.30 (0.77–2.19)
Perceived adequate water intake				
No	42 (71.2)	17 (28.8)	0.287	1.00 (Reference)
Yes	145 (63.3)	84 (36.7)		1.43 (0.74–2.86)

Data are presented as median (range) or n (%). Percentages are calculated within rows. P values were calculated using the Mann–Whitney U test for continuous variables and Pearson's chi-square test with Yates' continuity correction or Fisher's exact test for categorical variables. Lifestyle factors were assessed using self-reported dichotomous questions. For each variable, “Yes” and “No” correspond to the presence and absence of the respective condition or behavior, as defined in the Methods section. The number of participants varied across variables because of missing responses. Abbreviations: BMI, body mass index; HD, hemorrhoidal disease; OR, odds ratio; CI, confidence interval.

Supplementary Table 2. Comparison of characteristics between women with resolved and persistent hemorrhoidal disease in a cross-sectional study conducted in Japan, from May to September 2023 (N =104)

Variable	Resolved (n=44)	Persistent (n=60)	P value	unadjusted OR (95%CI)
Age(years)	34.5 (20–51)	34.0 (23–54)	0.404	-
BMI (kg/m²)	20.1 (16.1–28.1)	20.1 (16.3–28.5)	0.831	-
Birthweight, g	2,984 (2,122– 4,050)	3,118(1,625- 4,136)	0.028	-
Labor duration, h	8 (2–48)	7 (2.5–43)	0.268	-
Second-stage duration, min	30 (2–120)	30 (2–240)	0.887	-
History of HD before pregnancy, n (%)				
No	21 (47.7)	14 (23.3)	0.012	1.00 (Reference)
Yes	23 (52.3)	46 (76.7)		2.97 (1.19–7.60)
Parity, n (%)				
Primiparous	21 (47.7)	27 (45.0)	0.843	1.00 (Reference)
Multiparous	23 (52.3)	33 (55.0)		1.11 (0.48–2.62)
Lifestyle habits, n (%)				
Breakfast consumption				
No	9 (20.5)	14 (23.3)	0.813	1.00 (Reference)
Yes	35 (79.5)	46 (76.7)		0.85 (0.29–2.39)
Subjective constipation				
No	30 (68.2)	41 (68.3)	1.000	1.00 (Reference)
Yes	14 (31.8)	19 (31.7)		0.99 (0.40–2.51)
Exercise during the week				
No	33 (75.0)	45 (76.3)	1.000	1.00 (Reference)
Yes	11 (25.0)	14 (23.7)		0.93 (0.34–2.59)
Perceived adequate dietary fiber intake				
No	26 (59.1)	35 (58.3)	1.000	1.00 (Reference)
Yes	18 (40.9)	25 (41.7)		1.03 (0.44–2.46)
Perceived adequate water intake				
No	12 (27.3)	12 (20.0)	0.481	1.00 (Reference)
Yes	32 (72.7)	48 (80.0)		1.49 (0.54–4.15)

Data are presented as median (range) or n (%). Percentages are calculated within columns. P values were calculated using the Mann–Whitney U test for continuous variables and Pearson's chi-square test with Yates' continuity correction or Fisher's exact test for categorical variables. Lifestyle factors were assessed using self-reported dichotomous questions. For each variable, “Yes” and “No” correspond to the presence and absence of the respective condition or behavior, as defined in the Methods section. The number of participants varied across variables because of missing responses. Abbreviations: BMI, body mass index; HD, hemorrhoidal disease; OR, unadjusted odds ratio; CI, confidence interval.

Supplementary Table 3. Comparison of characteristics between women with new-onset postpartum hemorrhoidal disease and those without hemorrhoidal disease during either pregnancy or the postpartum period in a cross-sectional study conducted in Japan from May to September 2023 (N = 185)

Variable	New-onset (n=41)	Neither (n=144)	P value	unadjusted OR(95%CI)
Age(years)	32 (22–57)	33.5 (21–57)	0.324	-
BMI (kg/m²)	20.1 (16.9–30.0)	20.5 (16.4–32.9)	0.195	-
Birthweight, g	2,968 (1,956–3,638)	3,030 (1,430–5,040)	0.370	-
Labor duration, h	6 (3–58)	7 (1–48)	0.769	-
Second-stage duration, min	30 (5–180)	30 (1–180)	0.961	-
History of HD before pregnancy, n (%)				
No	27 (67.5)	130 (90.3)	<0.001	1.00 (Reference)
Yes	13 (32.5)	14 (9.7)		4.42 (1.71–11.49)
Parity, n (%)				
Primiparous	22 (53.7)	73 (51.0)	0.860	1.00 (Reference)
Multiparous	19 (46.3)	70 (49.0)		0.90 (0.42–1.91)
Lifestyle habits, n (%)				
Breakfast consumption				
No	10 (25.0)	26 (18.2)	0.370	1.00 (Reference)
Yes	30 (75.0)	117 (81.8)		1.50 (0.58–3.65)
Subjective constipation				
No	30 (75.0)	110 (76.8)	0.835	1.00 (Reference)
Yes	10 (25.0)	33 (23.2)		1.10 (0.43–2.62)
Exercise during the week				
No	36 (90.0)	109 (77.9)	0.113	1.00 (Reference)
Yes	4 (10.0)	31 (22.1)		2.55 (0.82–10.61)
Perceived adequate dietary fiber intake				
No	22 (55.0)	91 (63.6)	0.360	1.00 (Reference)
Yes	18 (45.0)	52 (36.4)		1.43 (0.66–3.08)
Perceived adequate water intake				
No	5 (12.5)	30 (21.1)	0.263	1.00 (Reference)
Yes	35(87.5)	112 (78.9)		1.87 (0.65–6.64)

Data are presented as median (range) or n (%). Percentages are calculated within columns. P values were calculated using the Mann–Whitney U test for continuous variables and Pearson's chi-square test with Yates' continuity correction or Fisher's exact test for categorical variables. Lifestyle factors were assessed using self-reported dichotomous questions. For each variable, “Yes” and “No” correspond to the presence and absence of the respective condition or behavior, as defined in the Methods section. The number of participants varied across variables because of missing responses. Abbreviations: BMI, body mass index; HD, hemorrhoidal disease; OR, unadjusted odds ratio; CI, confidence interval.

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation	Manuscript page
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	Title p.1; Abstract p.2
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	pp.2-3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	pp.4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	p.5
Methods			
Study design	4	Present key elements of study design early in the paper	p.5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	pp.5-6
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants	pp.5
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	pp.6-8
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	pp.6-8
Bias	9	Describe any efforts to address potential sources of bias	pp.6
Study size	10	Explain how the study size was arrived at	pp.7
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	pp.7-8
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	pp.7-8
		(*b*) Describe any methods used to examine subgroups and interactions	N/A
		(*c*) Explain how missing data were addressed	p.7;Table1-6(pp.17-22)
		(*d*) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(*e*) Describe any sensitivity analyses	N/A
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	pp.5-6
		(b) Give reasons for non-participation at each stage	pp.5-6 (eligibility/exclusion

			only)
		(c) Consider use of a flow diagram	N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	pp.9-10;Table1(pp.17-18)
		(b) Indicate number of participants with missing data for each variable of interest	Table1(pp. 17)
Outcome data	15*	Report numbers of outcome events or summary measures	pp.9-10;Table2(pp.18)
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	pp.9-10; Table3-6 (pp.19-22)
		(*b*) Report category boundaries when continuous variables were categorized	pp.9-10
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	N/A
Discussion			
Key results	18	Summarise key results with reference to study objectives	pp.9-10
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	pp.13
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	pp.10-13
Generalisability	21	Discuss the generalisability (external validity) of the study results	pp.10-13
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	p.15

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.