

🏆 BEST IN CATEGORY PRIZE: PELVIC ORGAN PROLAPSE

DOES SELF-EFFICACY AND SOCIAL SUPPORT ENABLE WOMEN TO FOSTER THEIR PELVIC FLOOR HEALTH? A NON-RANDOMIZED CONTROLLED TRIAL IN RURAL NEPAL

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HYPOTHESIS / AIMS OF STUDY

This is the first trial investigating the effect of self-efficacy and social support promotion on pelvic health in rural Nepal. Furthermore, the present pelvic health promotion interventions include pelvic-floor-protective lifting techniques not complemented with pelvic floor muscle (PFM) training.

Prevalence of pelvic organ prolapse (POP) is highest in low-income countries. At least 10% of Nepali women suffer from this condition. The risk of POP is increased by carrying heavy loads such as water and firewood over long distances and on a daily basis. Traditionally, carrying heavy loads is part of women's responsibility besides raising children and running the household. Carrying heavy loads of water and firewood is unavoidable as it is crucial for ensuring the basic needs of Nepali families, however, behavioral modifications may diminish the risk for POP: Carrying less weight reduces the intra-abdominal pressure and adopting pelvic-floor-protective lifting techniques – PFM co-contraction (“The Knack”) (1) and exhalation while lifting – reduces the risk of pelvic floor descent during high intra-abdominal pressure. Nepali women seem to be aware of the high carrying risk, but they have low self-efficacy to engage in protective carrying behaviors (2). The enabling hypothesis suggests that social support helps coping with environmental challenges by strengthening the recipient's self-efficacy. For example, women coping with carrying loads by adopting pelvic-floor-protective behaviors.

The aim of this trial was to experimentally examine whether self-efficacy and social support promotion can enable women in a low resource setting to promote their pelvic floor health compared to giving information only and, whether self-efficacy and social support promotion for protective carrying behaviors can improve women's pelvic floor health.

STUDY DESIGN, MATERIALS AND METHODS

This investigation was designed as a 3-arm parallel non-randomized controlled trial including 300 women and their social partners in three villages of rural Nepal. Each village was allocated to one of the following three intervention conditions: Promotion of 1) self-efficacy, 2) self-efficacy + social support or 3) information only control. The village-based allocation to intervention conditions prevented an information transfer within villages.

Inclusion criteria for participants were adult women (18-49y), being involved in carrying loads, permanently living in the project area, and having a social partner to provide support.

First, all participants in all conditions (including the information only control condition) were personally visited at their home by a trained local health practitioner. Participants received information on possible health consequences of carrying heavy loads and pelvic-floor-protective carrying (reduction of carried weight and use of pelvic-floor-protective lifting techniques) via leaflets and verbal explanations. In addition, they obtained information about pelvic floor disorder prevention by coping with high intra-abdominal pressure while lifting, information about recommended weight limits, instruction of co-contraction of the PFM in a sitting position and, instruction (no practice) of pelvic-floor-protective lifting (PFM co-contraction and exhalation while lifting).

After this preliminary information and instructions, participants received additional interventions according to their assigned condition. Participants in the self-efficacy promotion condition participated in activities that aimed

to increase their self-efficacy based on psychological theory (3). The self-efficacy + social support promotion condition participants additionally had a social partner, who received all information, instructions, and self-efficacy activities and practiced protective lifting together with the participant.

Health care practitioners were extensively trained by psychologists and public health experts on self-efficacy and social support promotion, and by a pelvic physiotherapist as pelvic-floor-protective lifting techniques' instructor.

When delivering the interventions, all national COVID-19 restrictions had been lifted.

Co-primary outcomes were pelvic-floor-protective carrying behaviors at two-months follow-up: 1) reduction of carried weight and 2) use of pelvic-floor-protective lifting techniques. Secondary outcomes addressed pelvic floor health, measured by the revised Faces pain and numerical pain rating scale assessing pelvic/urogenital pain, the Pelvic Organ Prolapse Symptom Score, International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form, and the Pelvic Floor Impact Questionnaire.

The sample size was estimated at N = 300 by an a priori power analysis for a repeated-measures analysis of covariance for three conditions with a desired power of > 80%, a significance level of $\alpha = 0.05$, the assumption of medium effects and allowing for an expected dropout rate of up to 20% from baseline to follow-up.

Intervention effects were calculated by repeated measures analyses of covariance and planned contrasts.

RESULTS

Participant characteristics were age 36 ± 9 , number of births 2.6 ± 1.3 , illiteracy or informal education 45% and, pregnancy or up to three months postpartum 8%. At baseline, 15% of women reported symptoms of urinary incontinence and 14% reported to often feel one or more symptoms of POP.

Women in all conditions reduced carried weight by 3-6 kg ($p < 0.001$, $\eta^2 = 0.20$) on average, used protective lifting techniques more frequently (23-33%) ($p < 0.001$, $\eta^2 = 0.50$) and showed decreased symptoms of pelvic organ disorders at follow-up ($p < 0.001$, $\eta^2 = 0.10$). Self-efficacy promotion was superior compared to controls in increasing the use of pelvic-floor-protective lifting techniques ($p = 0.013$, $d = 0.28$). When additionally promoting social support, weight was reduced by 3kg more compared to self-efficacy only ($p = 0.005$, $d = 0.39$).

INTERPRETATION OF RESULTS

Participants of all conditions reduced the carried weight, used more pelvic-floor-protective lifting techniques, and improved in pelvic health over time. Women of the self-efficacy promotion and self-efficacy + social support promotion condition used pelvic-floor-protective carrying behaviors more frequently than women of the information only condition. This trial provides first promising evidence that self-efficacy and social support promotion enable women to improve care for their pelvic floor health in rural Nepal and therefore may complement educational approaches, including recommendations to reduce weight carried and physiotherapeutic instructions of pelvic-floor-protective lifting techniques.

To the authors' knowledge this is the first trial addressing an intervention of pelvic-floor-protective lifting techniques not complemented with PFM training. As all three conditions showed a decrease in pelvic organ disorders' symptoms this seems a promising and feasible approach in a low-resource setting, which should be further investigated as a sole intervention and including a control group, as this trial addressed pelvic-floor-protective lifting together with carried weight reduction.

CONCLUDING MESSAGE

This trial provides promising evidence of the significance of self-efficacy and social support to promote pelvic health in rural Nepal: Health behavior change including reduction of carried weight as well as application of pelvic-floor-protective lifting techniques (PFM co-contraction/ exhalation while lifting) can enable women to support their pelvic health.

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Funding Funding: Suzanne and Hans Biäsch Foundation for Applied Psychology **Clinical Trial** Yes **Registration Number** NCT05154006, clinicaltrials.gov **RCT** No **Subjects** Human **Ethics Committee** Ethical Review Committee of the Nepal Health Research Council (514/2021) and the Ethical Board of the University of Bern, Switzerland (2021-10-00005) **Helsinki** Yes **Informed Consent** Yes

Continence 7S1 (2023) 100987

doi: 10.1016/j.cont.2023.100987