



Critical Analysis on the Effectiveness of Online Tailored Advice to Prevent Running-Related Injuries and Promote Preventive Behaviour in Dutch Trail Runners

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The purpose of this study was to evaluate the effectiveness of adding online tailored advice to general advice on the determinants and actual preventive behavior and on the prevention of running-related injury (RRI) in Dutch trail runners. The study was a randomized controlled trial over 6 months, with 232 trail runners randomly assigned to an intervention or control group. The researchers hypothesized 20% reduction in the proportion of trail runners sustaining RRIs in the intervention group and 10% in the control group. Trail runners in the intervention group sustained 13% fewer RRIs compared with those in the control group after 6 months of follow-up. No significant between-group difference was observed on the determinants and actual preventive behaviors.

The same authors conducted a prospective cohort study to find the prevalence proportion of RRIs in Dutch trail runners and it was estimated at 22.4%, and the injury rate was 10.7 RRIs per 1000 hours of running [1]. The authors stated that there is no substantial evidence on interventions to prevent RRIs. However, selecting running shoes based on arch height did have an influence on injury risk in military basic training [2]. Additionally, a study showed the overall injury risk was lower in runners' who used motion control shoes [3]. These studies were assumed by the authors to be of little influence, and hence disregarded.

This study was a two-arm pragmatic randomized controlled trial over 6 months with blind assessment and blind delivery of intervention. The study was composed of a sample of Dutch trail runners registered in the Mud Sweat Trails database (n=1327) and the participants of a previous observational study (n=185) conducted with the same source population. Though the sample size is adequate, it is important to note that out of the 1327 and 185 individuals, just 232 agreed to participate and fill the questionnaire. A better response from the approached runners would have yielded more accurate results as it would analyse a larger population. The five steps of the Knowledge Transfer Scheme (KTS) were admirable as it showed the authors had defined the problem and summarized the available evidence beforehand. They then had a face-to-face meeting to develop the online tailored advice intervention (TrailS6) and to evaluate it with the current randomized controlled trial.

Both the control and intervention groups undertook a baseline as well as preventive behavior questionnaire. 1 week after this, both groups received general advice mainly pertaining to warm-up, cooling down, conditioning, and appropriate training gear. During the follow-up, tailored advice was delivered based on the RRI classification generated by the Oslo Sports Trauma Research Centre (OSTRC) questionnaire, that is, [1] no RRI, [2] non-substantial RRI or [3] substantial RRI (defined as RRIs resulting in moderate or major reductions in training volume, moderate or major reductions in running performance or complete inability to run). The advice was instantaneously and automatically delivered after the completion of the RRI questionnaire by directing the participant to a web page hosted by the study website. Expecting a runner with no medical background to self-assess and categorize themselves as having not experienced a running related injury or having experienced a non-substantial or substantial injury seems a bit far-fetched and may result in runners inaccurately putting themselves in the wrong category. If there was a way for the runners to have themselves physically examined and assessed by certified physiotherapists who would make this decision, accuracy of results could be improved. The flowchart explaining the design of the study is very clear and concise.

Descriptive analyses were performed to summarize the baseline data. Follow-up data were summarized using Bayesian linear mixed models (BLMMs) and Bayesian linear probability mixed models (BLPMMs). The baseline characteristics have been covered aptly and all parameters have been taken into consideration. A total of 87 participants (75.7%) reported 135 RRIs in the intervention group, and 91 (77.8%) reported 151 RRIs in the control group. Effects on the determinants of performing the intervention were considered non-significant. Effects of the intervention on preventive behaviors were also considered non-significant. The preventive effect of the online tailored advice on RRIs was significant. However, identifying the mechanism of the preventive effect and finding out why the intervention was not effective in changing preventive behavior is something the authors can look into in the future. Continuing follow-ups beyond 6 months and calculating long term results will also help us get a better idea.

Take home message- Online tailored advice may constitute a preventive component in multi component prevention programmes including, for example, supervised strengthening and proprioceptive training in order to enhance the likelihood of preventing running related injuries. Additionally, adding the preventive effects of these interventions may enhance the likelihood of preventing RRIs. The adherence of each component of the intervention should be reported in order to tailor future prevention programmes to the components with higher adherence, and to create strategies to increase the adherence of those less performed. Apart from the tailored advice, a physician must take into account other intrinsic (flexibility, strength, joint instability, warm-up, stretching, etc) and extrinsic (training load, appropriate equipment, environment, etc) risk factors of injury prevention and incorporate steps for its prevention into a runner's training routine.

References

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