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Effectiveness of a nurse-led health belief model-based educational intervention for reducing smartphone addiction in adolescents: A randomized controlled trial

Background

Smartphone addiction is an emerging behavioral concern among adolescents affecting their well-being. Nurse-led interventions grounded in behavioral theories like the Health Belief Model (HBM) offer promising strategies for prevention and reduction smartphone addcition. This investigation aimed to evaluate the effects of a nurse-led educational intervention, based on the HBM, on reducing smartphone addiction among adolescents.

Design

Randomized controlled trial was conducted with 200 adolescents aged 13–16 in Egypt. Participants were randomly assigned to either study group (n = 100), which received five structured nurse-led educational sessions based on HBM constructs, or a control group (n = 100), which received no additional education beyond the standard curriculum. Data were collected pre- and post-intervention using validated tools (Smartphone Addiction Inventory, knowledge assessments, and HBM-based scales). Statistical analyses included paired t-tests and linear regression.

Results

The intervention group demonstrated a significant decrease in smartphone addiction levels, from 85% at baseline to 32% post-intervention ($p < 0.001$). All HBM subscale scores (perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy) significantly improved in the intervention group ($p < 0.05$). Regression analysis identified age, sex, parental education, economic status, and daily smartphone use as significant predictors of addiction risk ($p < 0.001$).

Conclusion

A nurse-led, HBM-based educational intervention was effective in reducing smartphone addiction, improving adolescents' knowledge and health beliefs. These findings underscore the value of theory-driven, school-based programs in addressing adolescents' digital overuse.

Practice implications

Pediatric nurses are well-positioned to lead preventive educational interventions on smartphone addiction into routine school health services during critical adolescent stage.

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