Questionnaire design to evaluate water balance

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Introduction: Body water balance is determined by the difference between the sum of water intake and endogenous water production and the sum of losses. Several questionnaires have been developed to evaluate water intake through food and drinks. However, assessing water losses through different routes of elimination is more complicated. Thus, few questionnaires evaluate intake and loss of water at the same time.

Objective: This study aims to develop a hydration questionnaire which can accurately determine the hydration status in the university population.

Method: The questionnaire development process included 3 steps: (1) identifying all foods and beverages from Spanish food composition tables which have water content higher than 80% (w/w); (2) recognizing the drugs and pathologies that may compromise hydration status as well as important hydration habits such as daily fluid consumption; (3) compiling all items and developing the hydration questionnaire.

Results: The final version of the hydration questionnaire comprises 24 items about hydration habits, relevant pathologies and questions related to regular fluid elimination (urination/defecation). In addition, it includes a brief food frequency questionnaire of the main water diet contributors. There were no differences in psychological scores between HO and LO but significant positive correlations were found between diuresis and attention (r=0.2512, p<0.01) and concentration scores (r=0.2262, p<0.01).

Conclusions: Relationships were not found between diuresis and quality of life in both children and adults. However, there were significant positive correlations between diuresis and attention and concentration scores in boys, and lower stress and better mood in girls. Finally, a better hydration status is related to better selective attention and mental concentration scores in boys, and lower stress and better mood in girls.

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Key words: hydration, water balance, questionnaire.

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