CONFERENCE ABSTRACT

How the evaluate population health? A study of nine population management initiatives

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Introduction: Population health Management (PM) initiatives are introduced to transform healthcare by integrating multiple care domains and addressing the continuum of health and well-being of a population. Insight is required into a population's health and population health differences to evaluate and tailor these initiatives. This creates a demand for usable and accurate instruments for measuring population health and variations in population health between PM initiatives. This study aims to determine the usability of commonly used instruments for measuring population health and assesses population health differences between nine Dutch PM initiatives and the impact of demographic, personal and lifestyle factors.

Method: In nine Dutch PM initiatives a population health survey was administered covering the Short Form 12 version 2 (SF12, physical and mental health status), Kessler 10 (K10) and Patient Activation Measure 13 (PAM13), as well as demographic, personal and lifestyle factors. The performance within a general population was assessed for the SF12, PAM13 and K10 instruments using descriptive and (confirmatory and exploratory) factor analyses as well as discriminant and reliability (Cronbach's alpha) analyses. Subsequently, the impact of differences in demographic, personal and lifestyle factors on differences in population health were studied using multiple regression analyses.

Results: The SF12 and PAM13 sum scores showed acceptable averages and distributions, while the results of the K10 indicated a floor effect. Construct validity was supported for the SF12 and K10, but was disproven for the PAM13. Reliability was good for all instruments. Consequently, age, education, origin, employment, Body Mass Index and smoking were identified as confounders for the studied nine PM initiatives. These confounders explained the differences found in PAM13 scores. However, not all health differences between PM initiatives were explained, as the SF12 outcomes still differed between PM initiatives once controlled.

 Conclusions: The SF12 and the PAM13 combined with demographic, personal and lifestyle characteristics can be used to measure the physical, mental, lifestyle and self-management constructs of population health. The K10 proved to be less useful for measuring a population's health, due to a lack of dispersion in scores. Differences in population health found by these instruments, corrected for demographic and lifestyle factors, can be used to tailor initiatives by focusing interventions on variables that are shown to affect the health of their population. Additionally,results indicate that health is affected by variables not measured by this study, as not all variation in population health between PM initiatives was explained. Efforts should be made to seek out these influencers.

Suggestions for future research: Future research should develop and study instruments that cover constructs of health introduced by recent definitions of health, such as participation and 'positive health'. Other factors beyond healthcare, e.g. air quality, should be considered to further refine PM initiatives' tailoring and evaluation.

Keywords: population health; population management; triple aim; evaluation