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Family conflict and somatic symptoms over 10 years: A growth mixture model analysis

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ABSTRACT

Objective: While family conflict and somatic symptoms are mutually associated, few longitudinal studies have examined multiple (heterogeneous) trajectory subgroups for family conflict and somatic symptoms and their covariation over time. The aim of this study was to identify heterogeneous trajectory subgroups for family conflict and somatic symptoms and their joint trajectories.
Methods: A representative sample of 424 community participants completed surveys at baseline and 1-, 4-, and 10-year follow-ups. Family conflict and somatic symptoms were assessed at each wave. Covariates (age, gender, marital status, education, and medical conditions) were assessed at baseline. Growth mixture modeling (GMM) was used to identify heterogeneous trajectory subgroups for family conflict and somatic symptoms. A parallel process GMM was used to examine joint trajectory subgroup membership between family conflict and somatic symptoms.
Results: There were three trajectory subgroups for family conflict: *stable low*; *worsening*; and *improving*, and three somewhat similar trajectory subgroups for somatic symptoms: *stable low*; *stable moderate*; and *improving*. Family conflict and somatic symptom trajectory subgroup memberships were jointly associated. Individuals who had stable low family conflict were most likely to follow a stable low somatic symptom trajectory. Individuals who improved in family conflict were most likely to continue to have stable low somatic symptoms or improve in somatic symptoms. Moreover, individuals who had stable moderate somatic symptoms were most likely to show worsening family conflict.
Conclusion: This study demonstrates heterogeneous family conflict and somatic symptom trajectories and indicates that these trajectories covary over time.

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Introduction

Family relationships, especially marital relationships, are consistently associated with physical and mental health [1–3]. In their review, Rosland and colleagues [3] reported that positive family characteristics (e.g., family cohesion) were associated with better chronic illness outcomes, whereas negative family characteristics (e.g., family conflict) were associated with poorer outcomes. While several studies have examined the association of family relationships with chronic illnesses (e.g., diabetes, hypertension) [4,5], mortality [6,7], and self-rated health or physical illness [8–10], few if any have focused on the longitudinal relationship between family conflict and somatic symptoms (e.g., headaches and insomnia). Somatic symptoms are common among community adult samples [11–14] and have a series of negative consequences, such as poor quality of life and physical status, increased health care visits, psychiatric disorders, and high mortality rates [13–20].

Findings about family conflict, somatic symptoms, and their association are primarily from cross-sectional studies [21,22], or from longitudinal studies that draw upon samples of depressed or primary care patients [23,24], children or adolescents [25–28], or only identify overall trajectories but not heterogeneous (multiple) trajectory subgroups [12,29,30]. Identifying heterogeneous trajectory subgroups is important because examining variability in individual trajectories may yield more specific information about changes over time that could be used to select or develop appropriate interventions for certain subgroups of individuals. However, to our knowledge, no studies have examined multiple trajectory subgroups for family conflict and somatic symptoms, or the association between heterogeneous trajectory subgroups

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of family conflict and somatic symptoms, especially among a community sample of adults.

Growth trajectory subgroups: family conflict

Longitudinal studies of changes in family conflict among community adults have mostly focused on marital conflict, and found heterogeneity in marital conflict trajectories. For example, among married individuals assessed at 6 waves over 20 years, there were three marital conflict trajectory subgroups: high stable (23%), medium stable (61%), and low stable (17%) [31]. The largest subgroup, medium stable conflict, was characterized by a stable trajectory during the first 12 years, followed by a slight decrease in marital conflict. Furthermore, compared to men, women were more likely to be in the high stable conflict subgroup rather than the low stable subgroup.

Growth trajectory subgroups: somatic symptoms

Most longitudinal studies of somatic symptoms among community samples have treated individuals as a single homogeneous group by identifying one overall trajectory [12,30]. For example, Sutin et al. [12] found a nonlinear trajectory over 21 years among a community sample such that somatic symptoms decreased from early to middle adulthood, and then increased in older adulthood. In a previous study [30], we found that somatic symptoms decreased from baseline over four time points during a 10-year period in a community sample.

As far as we know, no studies have examined subgroups of trajectories in somatic symptoms in a community sample of adults over more than two time points. The longitudinal study of Fonda and Herzog [11] found, in community adults aged 70 or older, that 53% reported the same number of somatic symptoms, but 25.6% reported a decrease, and 21.5% reported an increase. Their study identified distinct patterns of changes in somatic symptoms over two time points within a relatively short time frame (two years apart); however the extent to which there are distinct trajectories of somatic symptoms over a long time period is unknown.

Relationship between family conflict and somatic symptoms

Family conflict plays a critical role in predicting somatic symptoms [21,22,32]. However, most studies examining the relationship between family conflict and somatic symptoms relied on a cross-sectional design [21,22], or drew from a sample of primary care patients [32]. In our study of the relationship between overall trajectories of family conflict and somatic symptoms, we found that changes in one trajectory corresponded to similar changes in the other trajectory over time [30]. To our knowledge, there are no longitudinal studies that examine the extent to which there are distinct trajectory subgroups (i.e., multiple, heterogeneous subgroups) for family conflict and somatic symptoms over an extended time period, nor there are any studies that examine the joint association between such subgroups of family conflict and somatic symptom trajectories in a community sample of adults.

Personal characteristics

Some characteristics of individuals may influence trajectories of family conflict and somatic symptoms. Individuals who were older, female, widowed or divorced, less educated, or had more medical conditions were more likely to report family conflict and somatic symptoms [12,16,31,33–37]. Therefore, it is essential to consider personal characteristics when identifying family conflict and somatic symptom trajectories.

Present study

The primary purpose of the present study was to identify multiple trajectory subgroups of family conflict (identified by family disagreements) and somatic symptoms (identified by physical symptoms) and how they jointly change over time in a community sample of adults assessed over 4 waves spanning 10 years. We addressed three research questions. (1) How many distinct trajectory subgroups best characterize the changes in (a) family conflict and (b) somatic symptoms? (2) Which personal characteristics predict subgroup membership in specific family conflict and somatic symptom trajectories? (3) What is the association between family conflict and somatic symptom trajectory subgroups?

We did not have specific hypotheses about how many trajectory subgroups would be identified nor how personal characteristics would predict trajectory subgroup membership for family conflict and somatic symptoms. We expected a dynamic joint relationship between family conflict and somatic symptom trajectory subgroups based on our previous research examining the relationship between their overall trajectories [30].

Methods

Sample and procedure

A representative sample of 424 community participants, aged 18 and over from Northern California, completed a self-report survey at baseline (T1) and 1-year (T2), 4-year (T3), and 10-year (T4) follow-ups. Among those alive at each follow-up, the response rates were 96% ($n = 405$), 93% ($n = 387$), and 84% ($n = 333$) at T2, T3, and T4. Family conflict and somatic symptoms were assessed at each time point, and personal characteristics (e.g., age, gender, marital status, education, and medical conditions) were assessed at baseline. At each of the three follow-ups T2, T3, and T4, individuals who were and those who were not successfully followed did not differ significantly in family conflict or somatic symptoms measured at the just-prior time point. The study was approved by the Stanford University Institutional Review Board, and all participants signed consent forms at each wave.

Measures

All variables in the present study were assessed by the Health and Daily Living Form [38], a widely used self-report survey to assess a number of family and personal functioning criteria, such as psychological and physical health symptoms.

Family conflict

A checklist of 14 common areas of disagreement was used to assess whether participants had experienced family conflict (0 = no, 1 = yes). Examples include money, helping with household chores, politics, and discipline [30]. Items were summed to compute a family conflict score (ranging from 0 to 14), with higher scores indicating more family conflict. Cronbach's alpha was .75, .73, .74, and .69 for each time point, T1 to T4, respectively.

Somatic symptoms

A checklist of 12 physical symptoms was used to assess whether participants had experienced each type of symptoms fairly often over the past 12 months (0 = no, 1 = yes). Examples include nervousness, felt weak all over, hands trembling, headaches, constipation, and insomnia [30]. The items were summed to compute a somatic symptom score (ranging from 0 to 12), with higher scores indicating more somatic symptoms. Cronbach's alpha was .80, .82, .79, and .75 for each time point, T1 to T4, respectively.