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Divorce and changes in psychiatric morbidity: register-based trajectories of psychotropic medication among middle-aged Finns

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ABSTRACT

Background: The prevalence of psychiatric morbidity might change before and after divorce in a manner similar to psychological distress. We measure psychiatric morbidity with prescribed psychotropic medication, and examine changes in medication prevalence 5 years before and 5 years after divorce.

Methods: We used population-registration data on 166,049 married Finns aged 25-64, of whom 23,956 divorced during 1995-2003. We divided time before and after the date of divorce into three-month intervals, and assessed the prevalence of psychotropic medication (ATC-codes N05 & N06 excluding N06D) during each interval. These data were analyzed with repeated measures logistic regression using generalized estimating equations. We report changes in prevalence by sex, medication type and socio-demographic characteristics.

Results: The average three-month prevalence of psychotropic medication was 7% among divorced men and 10% among divorced women. Compared to those whose marriage continued, men who eventually divorced had 1.57 and women 1.40-times higher odds for medication purchases already 3.5-5 years before divorce. Medication prevalence increased thereafter, the increase accelerating 2 years before divorce to 29% per year among men and 27% among women. The highest prevalence was reached 6-9 months before divorce. A decrease during the next 18 months followed, after which little change occurred. Largest pre- and post-divorce changes were observed in the purchases of antidepressants, and more so among those who were younger, employed, had high level of income or education, owned their home, or divorced from their first marriage. However, socio-economic resources had little mediating effect on the excess medication among the divorced.

Conclusions: Pronounced psychiatric morbidity seems to be related to the process of divorce rather than to post-divorce disadvantage. Age and socio-economic factors moderate the effect divorce has on psychiatric morbidity, but excess medication among the divorced is not explained by socio-economic disadvantage, suggesting a need for psychological rather than socio-economic support.

INTRODUCTION

Compared to the married, the divorced have consistently shown worse mental health, and the transition from married to divorced state has been found to increase depressive symptoms (Barrett 2000, Blekesaune 2008, Bulloch et al. 2009, Hughes & Waite 2009, Liu & Chen 2006, Meadows et al. 2008, Simon 2002, Strohschein et al. 2005, Wade & Pevalin 2004, Waite & Lewin 2009, Williams 2003, Williams & Dunne-Bryant 2006, Wu & Hart 2002). Marital status differences in psychiatric morbidity are even larger than differences psychological distress (Joutsenniemi et al. 2006). Even though the number of divorces has increased (Eurostat 2008), over time the health of the divorced relative to the married has not improved (Liu & Umberson 2008, Murphy et al. 2007). However, in countries with high national divorce rate, the difference in the use of mental health care between the divorced and the married is smaller than in countries where divorce is less common (Bracke et al. 2010).

The worse mental health of the divorced compared to the continuously married is suggested to be a combination of selective and causal effects, with psychiatric morbidity increasing the risk of divorce and divorce increasing psychiatric morbidity (Aseltine & Kessler 1993, Bulloch et al. 2009, Liu & Chen 2006, Menaghan & Lieberman 1986, Williams 2003). The causal effect of divorce on mental health is suggested to reflect both the impact of going through a divorce as well as the detrimental effect of being divorced (Hughes & Waite 2009). It has also been argued, that the causal mental health effects of divorce are strongest during the period of separation or the months immediately after divorce (Blekesaune 2008, Wade & Pevalin 2004, Waite & Lewin 2009, Willitts et al. 2004), but findings on the stability of depressive symptoms after divorce are somewhat inconsistent. Different measures of mental health, time gaps of varying length between observations, different classification of recent divorces and the inclusion of remarried individuals in some studies and exclusion in others complicate comparisons. The number of divorced individuals in samples is also strongly related to the statistical power of analyses in detecting differences in short- and long-term effects.

We overcome the limitations of previous research by using a large register-based data set with dates of divorces and dates of purchases of prescribed medication, as well as annual socio-economic factors. We aim to provide new information on the dynamic changes of psychiatric morbidity by analyzing psychotropic medication use in three-month intervals 5

years before and 5 years after divorce. We first analyze the trajectories of psychotropic medication by medication type separating sedatives and hypnotics, antidepressants and medication for severe mental disorders (e.g. psychosis), and then by socio-demographic factors.

METHODS

The study is based on an 11% random sample of the Finnish population. The data, which contain annual socio-economic and household information, are collected annually from different administrative records to provide labour-force statistics. In addition, dates of marriage and divorce are available until December 31, 2003, and end of year information on marital status is available for the next year.

These data were further linked to the prescription register of the Social Insurance Institution of Finland to include information on all purchases of mental health medication from the beginning of 1995 to the end of 2009. We extracted from the sample all purchases of psycholeptics and psychoanaleptics (ATC-codes N05 & N06) excluding medication for dementia (N06D). These were further divided into three groups: (1) antidepressants (N06A), (2) sedatives and hypnotics (N05B & N05C) and (3) medication for severe mental disorders: medication for psychosis (N05A), psychostimulants (N06B), and combined products (N06C).

All medication is prescribed by a physician and information on all prescribed drugs bought from any pharmacy in the country is forwarded to the register as part of the national drug reimbursement scheme. The register includes information about the day of the purchase and the type of medication classified according to the WHO Anatomical Therapeutic Chemical (ATC). Linkage of the data sources was done using a unique personal identification number assigned to all Finnish citizens. The study has been approved by the ethics committee of Statistics Finland.

For our final sample, we selected all those who divorced during 1995-2003 or were continuously married during 1995-2004. For each of the divorcees the date of divorce was taken as the reference point, and each divorcee was followed five years before and five years after the reference. If a person experienced more than one divorce during 1995-2003, the first divorce was chosen as the reference. For the continuously married, follow-up begins January 1, 1995 and ends December 31, 2004, the reference point being December

31, 1999. We further narrowed our sample to those aged 25 to 64 at the reference point. Our final sample includes 166,049 married Finns, of whom 23,956 divorced during 1995-2003.

We then divided the follow-up time into three-month time intervals. For each interval we calculated whether an individual had made any purchases of psychotropic medication. The proportion of individuals using psychotropic medication during intervals before and after divorce is presented graphically compared to the continuously married.

The effect of divorce on psychotropic medication was then analyzed using repeated measures logistic regression with adjustment for socio-demographic characteristics. We measured socio-demographic characteristics with age, educational level, social class, income, main activity, home ownership, children in the household and whether or not in first marriage. These variables were time-variant and measured annually except for social class, which was measured in the end of 1990, 1995 and 2000. For each three-month period, the values from the end of previous year, or for social class nearest previous values, were used. The method of generalized estimation equations was implemented to control for within-individual correlation (Twisk 2003).

Age was classified into 5-year age groups. Our three educational categories were based on the highest educational qualification: (1) tertiary, (2) intermediate, and (3) basic education or less. Social class was categorized based on the classification used by Statistics Finland: (1) Upper non-manual, (2) lower non-manual, (3) manual, and (4) other. The economically inactive were classified according to their previous occupation, or if that was not available according to the occupation of the head of the household. Annual income included all individual-level taxable income (including salaries, capital income and income transfers). The income variable was classified into quintiles based on the yearly income distribution in the sample population. The main activity in the previous 12 months was categorized in four groups: (1) employed, (2) unemployed, (3) retired and (4) other (e.g. homemakers and students). Home ownership was classified in two groups: (1) owner-occupier and (2) renter or other. Having children in the household was used as a binary variable. The number of all previous marriages was also recorded, whether they ended in divorce or the death of a spouse. A binary variable for whether or not in first marriage was used in the analyses.

All analyses were conducted using Stata 11.

RESULTS

The average three-month prevalence of psychotropic medication was 7% among divorced men and 10% among divorced women. Compared to those whose marriage continued, men who eventually divorced had 1.57 and women 1.40-times higher odds for medication purchases already 3.5-5 years before divorce. Medication prevalence increased thereafter, the increase accelerating 2 years before divorce to 29% per year among men and 27% among women. The highest prevalence was reached 6-9 months before divorce. A decrease during the next 18 months followed, after which little change occurred. Largest pre- and post-divorce changes were observed in the purchases of antidepressants, and more so among those who were younger, employed, had high level of income or education, owned their home, or divorced from their first marriage. However, socio-economic resources had little mediating effect on the excess medication among the divorced.

CONCLUSIONS

Divorce affects psychiatric morbidity, with the critical time expanding from two years before to one year after divorce. Particularly, the period before divorce is critical in the development of mental health, suggesting that policies should focus not only on the post-divorce but also on the pre-divorce period.

Excess medication among the divorced compared to the continuously married is not explained by socio-economic disadvantage, suggesting that psychological support measures instead of economical would be of value. However, age and socio-economic factors have a moderating effect on medication use among the divorced. Future research should identify other characteristics causing variation in the adjustment to divorce.

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