Obesity and early cessation of breastfeeding in Denmark

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Introduction

Evidence is accumulating that maternal obesity at the time of conception negatively affects the duration of breastfeeding among mothers from the United States¹–⁴ and other countries.⁵–¹⁰ Breastfeeding is multi-factorial,¹¹ and several factors may contribute to this association. The consistency of findings across countries with and without strong support for breastfeeding points to a biological explanation.¹² Being heavier before pregnancy is associated with both a reduced prolactin response to suckling in the first week post-partum¹³ and a delay in the onset of copious milk secretion, lactogenesis II.⁴,¹⁴ Mechanical difficulties with proper positioning of the infant and latching on¹⁵ and other aspects of poor early breastfeeding behaviour, e.g. nursing frequency and use of formula supplement,⁶ could also be involved.

Among mothers in general, socio-demographic factors (such as age, parity, education, racial/ethnic group and income) are well-known determinants of both the choice to breastfeed and the duration of breastfeeding.¹⁶ Parity strongly influences the early lactation success.³ Psychosocial factors are also known determinants of the choice to breastfeed.¹⁷,¹⁸ as well as the duration of breastfeeding.¹¹,¹⁹–²¹ In western societies, obesity seems associated with low self-confidence, which suggests that socio-demographic and psychosocial factors may confound the association between BMI and breastfeeding duration.²² In a small study, Hilson et al.¹⁴ found that the association between maternal pre-pregnancy obesity and early discontinuation of breastfeeding was partially explained by psychosocial factors. Krause et al.²³ pointed to socio-demographic factors and, among those, parity as additional correlates of importance for the breastfeeding process among overweight and obese mothers. No study to date includes all relevant factors. Thus, it remains unknown whether obesity in pre-pregnancy is a significant determinant of the duration of breastfeeding among both primiparae and multiparae independent of the mothers’ previous breastfeeding experience, socio-demographic or psychosocial characteristics.

The present study was based on data from 1375 mothers in a cluster-randomized, community-based trial in Denmark.²⁴ Our aims were to investigate to what extent breastfeeding mother’s socio-demographic and psychosocial characteristics, parity, previous breastfeeding experience and prenatal conditions could explain the association between high BMI and early cessation of exclusive breastfeeding. In addition, we aimed to examine whether any of these factors modified the association of BMI with the duration of lactation among obese mothers should focus on those with no or little previous breastfeeding experience.

Methods

Setting, design and participants

The research reported here used data from a cluster-randomized, community-based trial designed to compare a group of women in western Denmark who received an intervention to prolong breastfeeding with a comparison group who received usual care from the health visitors. The mothers were recruited at the health visitors’ first visit, which occurred over a 6-month period that began in February 2004. All new mothers who lived in the study region, gave birth to a single infant with a gestational age of ≥37 full weeks and started breastfeeding were invited to participate. Exclusion criteria were as follows: mothers with an ethnic background other than Danish,
preterm delivery or twin birth. Mothers were only eligible for the present study if they were still breastfeeding at the time of the first home visit by the health visitor. Further details on the randomized trial have been reported elsewhere.24

**Data collection, questionnaire**

Briefly, at the health visitors’ first visit, the mothers received a self-administered questionnaire coded with study identification number together with a reply envelope. The health visitor started a registration form for every mother who fulfilled the inclusion criteria and followed those who agreed to participate for 6 months (26 weeks). The health visitors completed the registration form with follow-up data about the duration of exclusive breastfeeding. In the participating municipalities, 2186 mothers gave birth during the recruitment period. Of the 1760 mothers who fulfilled the inclusion criteria, 1597 agreed to participate and 1442 (90%) returned the questionnaire, on average, 17 days after birth.

The self-administered questionnaire was reviewed by four experts in the subject area and, after adjustment, was subsequently tested for content and face validity in three rounds with a group of 24 mothers. It covered 44 items believed to be associated with the duration of breastfeeding, including socio-demographic characteristics, maternal post-partum weight, previous breastfeeding experience, perinatal conditions, breastfeeding behaviour and questions about infant birth weight and pacifier use.

**Variables**

The outcome variable was the duration of exclusive breastfeeding measured in weeks. Exclusive breastfeeding was defined as a child being fed only the mother’s milk.25 Early cessation was of particular interest, so durations of longer than 17 weeks were censored at 17 weeks.

The mothers’ post-partum BMI was used in the analysis, as information on pre-pregnancy weight was not reported. Self-reported data on height, post-partum weight and parity were obtained from the mothers’ questionnaire. BMI was calculated as the post-partum weight in kilograms divided by the height in metres squared. To account for the fact that mothers who are 2–3 weeks post-partum weigh more than other non-pregnant women,26 we increased the WHO cutpoints by two BMI units before categorizing the mothers’ post-partum weight-for-height values. This resulted in the following three categories: low BMI ($BMI < 27$ kg/m$^2$), moderate BMI ($27 \leq BMI < 32$ kg/m$^2$) and high BMI ($BMI \geq 32$ kg/m$^2$).

**Socio-demographic variables**

Maternal age and schooling were measured in years and categorized: 15–24, 25–32, 33–46, and at most 10 years and >10 years, respectively. Smoking referred to current smoking and was categorized in ‘yes’ or ‘no’.

**Breastfeeding history**

Parity was categorized as primiparous or multiparous. Previous breastfeeding experience was measured in weeks and categorized in none for primiparae and 0–5, 5–17 or >17 weeks for multiparae.

**Psychosocial variables**

Self-efficacy and confidence were both measured on a 5-point Likert scale. Self-efficacy was categorized in high (1–2), moderate or low (3–5), and confidence in feeling confident (1–3) or not feeling confident (4–5). Knowledge was measured by a 10-item knowledge test, and correct answers according to evidence-based knowledge were categorized in high knowledge (7–10 correct answers) or low knowledge (0–6 correct answers). Perinatal variables included formula feeding within the first 5 days after birth, and days from birth until onset of copious milk secretion. Feeding formula within the first 5 days after birth was categorized in ‘yes’ or ‘no’. Onset of lactation (lactogenesis II) was measured in days and categorized in 0–3 days or 4+ days.

**Breastfeeding behaviour**

Use of nipple shield was categorized in ‘yes’ (always, now and then) or ‘no’ (never). Use of pacifier was categorized in ‘yes’ or ‘no’. Breastfeeding frequency was measured as number of breast feedings during a typical 24-hour period and categorized as $<7$ or $\geq 7$ day and night. Mothers’ perception of breastfeeding problems was categorized as ‘yes’ or ‘no’.

**Statistical methods**

The association between post-partum BMI and socio-demographic factors, breastfeeding history, psychosocial factors, perinatal conditions and breastfeeding behaviour was assessed by chi-squared tests. Cox regression analysis was used to estimate HRs to compare breastfeeding cessation rate within categories of each of these factors. The influence was described by a HR (95% CI) giving the cessation rate of exclusive breastfeeding for mothers in a given category relative to the cessation rate of exclusive breastfeeding for mothers in the reference category. The duration of exclusive breastfeeding was described by survival curves using the Kaplan–Meier method. Mothers who moved out of the area were censored at the time of change of address.

Cox regression analysis was further used to evaluate the influence of BMI on the cessation of exclusive breastfeeding stratified on parity. Initially, an estimate of the crude effect of post-partum weight-for-height was obtained. Next, the estimate was adjusted stepwise for the effect of the confounding factors identified in the initial analysis. Finally, we included interaction terms to see whether the association between BMI and breastfeeding cessation was modified by any of the confounding factors. All variables were included as covariates except for treatment allocation and previous breastfeeding experience, which were included as stratifying variables. Treatment allocation was included in all analyses. The hypothesis of no-effect modification was assessed by a Wald’s test. Cox regression model assumes proportional cessation rates, and a test based on the so-called Schoenfeld residuals was used to assess the validity of this assumption. Multiple imputation was used to evaluate the effect of the reduction in sample size due to missing values in the confounding factors. Finally, the main analyses were repeated using robust standard errors to investigate whether adjustment for clustering had any impact on the results. Stata version 12 was used for data management and statistical analyses.28

**Ethics**

This study was approved by the Science Ethics Committee for the Counties of Ringkøbing, Ribe and Sonderjylland and the Danish Data Protection Agency.

**Results**

The 1375 mothers who had complete information on breastfeeding duration and post-partum BMI formed the study population. The 67 mothers with no information on BMI had a significantly higher cessation rate of exclusive breastfeeding than the mothers with information on BMI (data not shown). In the study population, 63% had low BMI, 25% moderate BMI and 12% high BMI (table 1). The high-BMI mothers were significantly younger and had shorter duration of schooling than other mothers at baseline. They had a later onset of milk secretion, expressed less self-efficacy with respect to breastfeeding, breastfed less frequently and had more frequently early breastfeeding problems than other mothers. Their babies received more formula within the first days after birth (table 1).
The previous breastfeeding experiences among high-BMI multiparae were, on average, 15 weeks (SD 10.9 weeks), compared with 18 weeks (SD 9.1 weeks) among the low-BMI mothers and 16 weeks (SD 10.6 weeks) among the moderate-BMI mothers. When looking at the entire study population, significant associations with breastfeeding duration were seen for all characteristics within socio-demographic and psychosocial factors, perinatal conditions and breastfeeding behaviour except for smoking habits (table 1).
This suggests that all four groups of factors included variables that could confound the association between BMI with breastfeeding duration.

All mothers included in the study started breastfeeding after birth. The duration of exclusive breastfeeding was significantly shorter for mothers with high BMI than for mothers with moderate and low BMI values (P = 0.002) (figure 1). At 4 months (17 weeks) after delivery, 74 mothers (46%) in high-BMI group were still exclusively breastfeeding compared with 190 (55%) in the moderate-BMI group and 554 (64%) in the low-BMI group.

In the unadjusted analyses, mothers with high and moderate BMI had a significantly higher cessation rate of exclusive breastfeeding during the first 17 weeks after birth (HR 1.67, 95% CI 1.34–2.09, and HR 1.24, 95% CI 1.04–1.49, respectively) relative to mothers with low BMI. Among both primiparous and multiparous mothers with high BMI, the cessation rate was significantly increased (HR 1.77, 95% CI 1.28–2.46, and HR 1.59, 95% CI 1.17–2.15, respectively).

The adjusted Cox regression analyses were based on the 1226 mothers with information on all confounding factors included in the analysis (table 2). Adjustment for socio-demographic factors (mothers’ age and duration of schooling) reduced the cessation rate in the high BMI group among primiparae a little. The minor change in the estimate for high BMI in primiparous women when adjusting for previous breastfeeding experience reflects that this variable was not included as a covariate, but as a stratifying factor. Adding adjustment for psychosocial factors (self-efficacy) and perinatal conditions (formula supplement within 5 days and timing of the onset of lactation) did not change the HRs, among primiparae, HRs in the unadjusted and adjusted analyses were similar, and the high-BMI mothers in this group had a significantly higher risk of early breastfeeding cessation. Among multiparae, adjustment for first socio-demographic factors and then previous breastfeeding experience led to insignificant HRs for high-BMI mothers. The dependency on parity of the association between BMI and duration of exclusive breastfeeding differed significantly (P = 0.03) between primiparous and multiparous mothers in the final adjusted analysis. Additional adjustment for factors describing breastfeeding behaviour (nursing frequency and early problems; n = 1203) did not influence HRs for early breastfeeding cessation for either high BMI primiparae or multiparae (HR 1.68, 95% CI 1.16–2.43, and HR 0.91, 95% CI 0.63–1.31, respectively).

The sensitivity of the results reported in table 2 was evaluated by multiple imputation of missing values of self-efficacy, formula supplement and onset of lactation. A completed sample size of 1330 was obtained. Estimates based on 20 imputations were similar to those seen in table 2 (results not shown). Finally, a series of analyses investigated the consequences of a correction for the cluster randomization used in the trial. The robust standard errors used in these analyses were very similar, but slightly smaller (5% on average), to those used to derive the confidence intervals shown in table 2. Thus, in the final analysis (adjusted 4 in table 2), the interaction between the effect of parity and BMI on duration of exclusive breastfeeding was here strongly significant (P = 0.002).

Potential effect modification of each of the confounding factors included in the analyses was also investigated. For all variables except onset of lactation, no effect modification was identified. For onset of lactation, a significant interaction with the effect of BMI was found (P = 0.04). Further analysis identified a complex second-order interaction with parity and BMI. Compared with primiparae of low BMI, those of high BMI had a higher hazard of early cessation of breastfeeding at either 0–3 or 4+ days. Compared with multiparae of low BMI, those of high BMI did not have a higher hazard of cessation of breastfeeding, but mothers of low BMI had a higher risk of cessation of breastfeeding at 4+ days (figure 2).

![Figure 1 Proportion of exclusive breastfeeding according to BMI groups](https://academic.oup.com/eurpub/article-abstract/23/2/316/683280)

**Figure 1** Proportion of exclusive breastfeeding according to post-partum BMI as a function of the age of the child. Post-partum BMI is categorized as low BMI (<27.0 kg/m²), moderate BMI (between 27.0 and 32.0 kg/m²) or high BMI (<32.0 kg/m²).

### Table 2 Unadjusted and adjusted HRs for breast feeding cessation before week 17 by post-pregnancy BMI categories for all women and stratified by parity, N = 1226

<table>
<thead>
<tr>
<th>BMI</th>
<th>Unadjusted HR (95% CI)</th>
<th>Adjusted 1&lt;sup&gt;a&lt;/sup&gt; HR (95% CI)</th>
<th>Adjusted 2&lt;sup&gt;b&lt;/sup&gt; HR (95% CI)</th>
<th>Adjusted 3&lt;sup&gt;c&lt;/sup&gt; HR (95% CI)</th>
<th>Adjusted 4&lt;sup&gt;d&lt;/sup&gt; HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primiparous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low BMI</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Moderate BMI</td>
<td>1.25 (0.95–1.66)</td>
<td>1.22 (0.92–1.62)</td>
<td>1.22 (0.92–1.62)</td>
<td>1.22 (0.92–1.62)</td>
<td>1.14 (0.86–1.51)</td>
</tr>
<tr>
<td>High BMI</td>
<td>2.01 (1.41–2.86)</td>
<td>1.69 (1.18–2.41)</td>
<td>1.71 (1.19–2.45)</td>
<td>1.86 (1.30–2.67)</td>
<td>1.74 (1.21–2.50)</td>
</tr>
<tr>
<td>Multiparous</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low BMI</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Moderate BMI</td>
<td>1.20 (0.92–1.56)</td>
<td>1.10 (0.85–1.44)</td>
<td>0.96 (0.74–1.26)</td>
<td>0.92 (0.71–1.21)</td>
<td>0.92 (0.71–1.21)</td>
</tr>
<tr>
<td>High BMI</td>
<td>1.48 (1.05–2.09)</td>
<td>1.24 (0.88–1.76)</td>
<td>1.01 (0.70–1.44)</td>
<td>0.99 (0.69–1.41)</td>
<td>0.89 (0.62–1.28)</td>
</tr>
<tr>
<td>All women</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low BMI</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Moderate BMI</td>
<td>1.23 (1.02–1.49)</td>
<td>1.16 (0.95–1.40)</td>
<td>1.08 (0.89–1.31)</td>
<td>1.05 (0.87–1.28)</td>
<td>1.02 (0.84–1.24)</td>
</tr>
<tr>
<td>High BMI</td>
<td>1.70 (1.32–2.17)</td>
<td>1.42 (1.10–1.83)</td>
<td>1.29 (1.00–1.66)</td>
<td>1.32 (1.02–1.71)</td>
<td>1.21 (0.93–1.57)</td>
</tr>
</tbody>
</table>

BMI estimates adjusted for:

a: Mothers’ age and duration of schooling

b: Previous breastfeeding experience

c: Self-efficacy
d: Formula supplement within 5 days and onset of lactation

Randomization group was included as a stratifying factor in all these analyses.
was also considered by Krause onstrates the influence of the socio-demographic variables, which moderate BMI (between 27.0 and 32.0 kg/m²) or high BMI been observed in several other investigations. This study dem-

Discussion

In this study, mothers with a high post-partum BMI more frequently had socio-demographic and psychosocial factors as well as perinatal and behavioural conditions known to increase the risk of early breastfeeding cessation than mothers with normal post-partum BMI. As expected, high-BMI mothers had a significantly higher rate of cessation of exclusive breastfeeding. In the adjusted analyses, however, we identified that the association between BMI and duration of exclusive breastfeeding depended on parity. Among primiparae, the high-BMI group had a significant higher risk of early breastfeeding cessation. Among multiparae, in contrast, adjustment for socio-demographic factors and previous breastfeeding experience removed the excess risk for early cessation of breastfeeding among high-BMI mothers. These findings confirm the excess risk among primiparous high-BMI women noted by others and identify multiparous high-BMI women without prior breastfeeding as individuals with excess risk of early cessation of breastfeeding.

Associations between obesity and breastfeeding duration have been observed in several other investigations. This study demonstrates the influence of the socio-demographic variables, which was also considered by Krause et al. and Amir and Donath, who concluded that obese mothers are more likely to belong to social groups who are less likely to breastfeed. Socio-demographic factors can point to groups of mothers who may need extra support breastfeeding, but otherwise these factors are difficult to influence and are less valuable to health professionals as potential targets for intervention.

Our results showed that the association between high BMI and duration of exclusive breastfeeding depended on parity. These findings demonstrate the importance of parity and previous breastfeeding experience in breastfeeding obesity research and support earlier findings from Dewey et al., who found that primiparity was associated with risk factors for suboptimal breastfeeding, and Krause et al., who found parity was related to lactation score. Previous experience with breastfeeding was crucial for multiparous mothers. This may indicate that heavier women who have breastfed previously have overcome the biological factors associated with shorter duration of breastfeeding. Research in experimental animals shows that maternal obesity is associated with abnormal development of the mammary gland, which delays the onset of copious milk secretion. However, once this development is completed, lactation can proceed normally. Inasmuch as previous behaviour usually is a strong determinant of current behaviour, mothers who have had positive breastfeeding experiences may be more likely to repeat this behaviour. Short and perhaps negative experiences with breastfeeding may reduce a woman’s interest in breastfeeding or her confidence in her ability to succeed the next time. As a result, she may make less effort to overcome the challenges of breastfeeding associated with having a high BMI. These findings suggest that previous breastfeeding experience is also an important factor to consider when studying the association between BMI and breastfeeding duration. Interventions to improve the duration of lactation among heavier mothers should focus on both primiparous mothers and multiparous mothers with no or short previous breastfeeding experience.

Adjustment for self-efficacy had only a modest impact on the association between BMI and duration of exclusive breastfeeding. This is partly supported by a newly published study by Metha et al., who found that psychological factors did not mediate the association between BMI and breastfeeding duration. In contrast, Hilsto et al. found that knowledge of breastfeeding modified the relationship between higher BMI and breastfeeding duration. Additional analyses of the present data showed that psychosocial characteristics were independently associated with the duration of exclusive breastfeeding among these Danish mothers (results not shown). Future research is needed to clarify the role of psychosocial factors in the association between high BMI and breastfeeding duration.

Among primiparous women with high BMI, the duration of breastfeeding was modified by the timing of the onset of copious milk secretion. This finding is in accord with the results of Nommsen-Rivers et al., who found that maternal obesity was related to delayed onset of lactation among first-time mothers, and Dewey et al., who found that mothers with high BMI were more likely to have delayed onset of lactation. Among the factors that could contribute to delayed onset of milk secretion is a reduction in the prolactin response to suckling in the first week observed among heavier women post-partum by Rasmussen and Kjolhede. These results substantiate the conclusion from Dewey et al. that primiparity or lack of previous breastfeeding experience are risk factors for delayed onset of lactation.

The maternal height and weight were both self-reported, so mis-classification of mothers into the appropriate post-partum BMI categories is possible. However, only a modest misclassification in self-reported BMI in a contemporary population of Danish mothers was observed in a previous study, so it seems unlikely that mis-classification could have materially affected the results. Unfortunately, information on pre-pregnancy BMI was not available for this sample. Instead the information on weight and height was obtained, on average, 17 days post-partum, so a modification of the usual cutpoints was necessary. This procedure led to a high-BMI group consisting of 11% of the mothers. This is comparable with the proportion of women with pre-pregnancy BMI ≥ 30 kg/m² found in Denmark of that time. It is possible that the heaviest mothers were over-represented among the mothers who fulfilled the inclusion criteria but then did not enrol in the study. It is also possible that the heaviest mothers are under-represented among mothers from whom we have data on weight. Consequently, the strength of the observed association may have been underestimated.

The large number of subjects and the availability of information about psychosocial and a wide range of other characteristics of the women as well as their breastfeeding behaviour are strengths of the present study. Mothers who entered this trial came from both rural and urban areas in 11 municipalities of western Denmark, and the study population represented approximately 75% of all births in these municipalities. Because of missing values in the confounding factors, the study population in the adjusted analyses was reduced to 1226 mothers (89%), but the crude association between BMI and duration of breastfeeding was similar in this subgroup.

This study was performed in Denmark in a Caucasian population where the proportion of mothers who breastfeed is high (58%...
exclusive breastfeeding until 17 weeks post-partum\(^{21}\)) compared with other western countries. The mothers who were recruited into this study delivered in hospitals that had adopted the Baby-Friendly Hospital Initiative. As a result, the subjects had excellent support for the decision to breastfeed and also for initiation of breastfeeding immediately after delivery. At the time of the study, primiparae usually stayed in the hospital for 4 days, but multiparae stayed for less than a full day. Moreover, Scandinavia is known for its high social support for breastfeeding, including a 24-week paid maternity leave in Denmark. These cultural aspects may mean that the associations with the duration of breastfeeding would be less than might be found in other countries where hospital-based support for breastfeeding and social support for breastfeeding in general are much lower.

This study contributes to on-going research of the association between obesity and breastfeeding duration by showing that parity and previous breastfeeding experience play a significant role. Our results indicate that primiparous as well as multiparous without previous breastfeeding experience are at the highest risk of early cessation of exclusive breastfeeding. As a result, these subgroups of women with a high post-partum BMI should be the primary targets for interventions. Unfortunately, successful interventions to improve the duration of breastfeeding among high BMI mothers have yet to be developed and are urgently needed.

### Acknowledgements

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### Conflicts of interest

None declared.

### Key points

- Parity and previous breastfeeding experience play a significant role in the association between high BMI and breastfeeding duration.
- Among high BMI mothers, primiparous and multiparous without previous breastfeeding experience are at the highest risk of early cessation of exclusive breastfeeding.
- Interventions to improve the duration of lactation among high BMI mothers should focus on both primiparous mothers and multiparous mothers with no or short previous breastfeeding experience.

### Reference


Introduction

Each year, tobacco smoking accounts for approximately 5 million deaths globally,1 while cannabis is the most commonly used illicit drug across industrialized countries.2 Psychoactive substance use generally begins in adolescence and while tobacco use largely persists after the transition to adulthood, cannabis use tends to decrease. However, recent evidence suggesting that a growing proportion of individuals maintain high levels of use into their 20s and 30s calls for research on factors associated with such persistence.3,4 Tobacco and cannabis use are disproportionately frequent in adults who belong to disadvantaged social groups.5,6 Additionally, childhood socio-economic disadvantage may be independently associated with later substance use,7,8 and there is suggestion that life-course socio-economic characteristics may be more precise than adult socio-economic position (SEP).9,10 In particular, declines in SEP (i.e. downward socio-economic trajectories) may be associated with elevated rates of tobacco smoking.11,12 but little is known regarding the association with cannabis use.

Childhood socio-economic disadvantage is associated with specific family and individual risk factors.13 Children who grow up in socially disadvantaged families may be more likely to display emotional and behavioral problems early on, to experience school difficulties, and have problems with their peers, which may further contribute to risk of substance use.14 Substance use in adolescence may, in turn, be related to poor educational and occupational outcomes in adulthood.15,16 The use of life-course socio-economic measures offers the possibility of investigating patterns of inequalities from childhood to adulthood.17

Life-course SEP and tobacco and cannabis use

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Background: Social inequalities in substance use have been well-documented; however, the impact of changes in socio-economic position from childhood to adulthood is unclear. We examined the relationship between intergenerational trajectories of social position and tobacco and cannabis use among young adults. Methods: Data come from 1103 participants (mean age: 28.9 years) of the Trajectoires Epidemiologiques en Population (TEMPO) study and their parents, participants of the GAZEL study, France. Multinomial regression analyses were used to examine associations between life-course socio-economic position (SEP) assessed using the parent’s reports of family income (1989 and 2002) and the participant’s educational attainment, occupational grade and job stability in 2009, with self-reported tobacco and cannabis use in 2009. Results: Compared with participants with stable intermediate/high SEP, those with stable low SEP and those with declining SEP were more likely to use tobacco (age- and sex-adjusted ORs = 2.03 and 2.26). Participants who experienced declining SEP were also disproportionately likely to use and abuse cannabis (adjusted ORs = 2.22 and 2.73). Associations remained significant after adjusting for family (parental smoking, alcohol use, ill health, unemployment, depression and divorce) and individual (early tobacco and cannabis use, academic difficulties, juvenile internalizing and externalizing problems) risk factors. Conclusions: Cross-sectional studies indicate social inequalities in substance use. Our longitudinal findings suggest that individuals who experienced declining SEP from childhood to adulthood may be twice as likely to use tobacco and cannabis compared with individuals with a stable/high trajectory. Interventions targeting substance abuse should take into account life-course determinants including the interplay between individuals’ socio-economic origins and later attainment.