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Visitation patterns and post-release offending: Exploring variations in the timing, rate, and consistency of prison visits

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ABSTRACT

Purpose: Prior research and theory suggest that receiving visits in prison can reduce recidivism. However, recent scholarship shows that there is variability in whether, how often, and when individuals are visited while incarcerated which may affect post-release outcomes. This study therefore investigates how the frequency and timing of prison visits relate to post-release offending among individuals incarcerated in the Netherlands.
Method: Data were drawn from the Dutch Prison Visitation Study, which includes detailed measures of visitation, recidivism, and several covariates. Group-based trajectory models were employed to identify visitation patterns. Then, logistic regression models were used to estimate the effects of these trajectories on the likelihood of reconviction.
Results: The results demonstrate that consistent, frequent visitation and visits near release are associated with reductions in reconvictions, especially in the first 6 months after release. No significant associations were found between individuals who only sporadically receive visits or experience a decrease in visits in the months before release on recidivism when compared to non-visited individuals.
Conclusions: These findings suggest that *some* visits (such as frequent, consistent visits) may be beneficial for reducing recidivism in the short-term. More research is needed to understand how and why these visits contribute to reductions in recidivism.

1. Introduction

Each year over 10 million individuals are incarcerated worldwide (Walmsley, 2015). Although the time spent in prison is intended to prevent crime, recidivism risks are high among individuals released from prison (Durose, Cooper, & Snyder, 2014; Weijters, Verweij, Tollenaar, & Hill, 2019). This is perhaps not surprising as persons released from prison face major challenges and stresses of having a criminal background (Visher, La Vigne, & Travis, 2004). A critical differentiating factor between those who can manage these challenges and those who are less successful is the availability of social support (Kjellstrand, Clark, Caffery, Smith, & Eddy, 2021; Maruna & Toch, 2005). Existing research shows that individuals who have social support after being released from prison are less likely to recidivate (Boman & Mowen, 2018), have improved mental health during reentry (Wallace et al., 2016), and are more likely to find housing and employment (Berg & Huebner, 2011; Hickert, Palmen, Dirkzwager, & Nieuwbeerta, 2019). Yet, maintaining contact with loved ones while incarcerated can be challenging. One of the few opportunities presented to individuals to facilitate meaningful social interaction and stay connected to family, friends, and the community while incarcerated is through prison visits.

A considerable amount of scholarship has already been directed at studying the extent to which receiving visits in prison is related to post-release outcomes. The bulk of this research focuses on recidivism. While such studies have found that visits are associated with reductions in recidivism (see Mitchell, Spooner, Jia, & Zhang, 2016 for a systematic review and meta-analysis), an examination of recent empirical work on visits' effects suggest that the relation is more complex. Current scholarship consistently finds that the relation between visitation and recidivism is heterogeneous. For instance, not all visits are positive experiences nor necessarily suitable for improving relationships, which can impact outcomes. Baker, Mitchell, and Gordon (2021) found that

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negative visitation experiences as opposed to positive visitation experiences actually *increased* individuals' concerns about recidivism, housing, and debts. Similarly, evidence suggests that more restrictive conditions of confinement, which impose more constraints and surveillance for visiting, are less effective in reducing recidivism (Turanovic & Tasca, 2021). These studies raise an important question: which visits and when are visits related to reductions in recidivism? To probe this question, articulate measures which capture the heterogeneity of prison visitation are needed. The work produced in recent years has made a good start, as studies have shifted the focus from whether individuals are visited to who is visiting (Bales & Mears, 2008; Duwe & Johnson, 2016) and how visits are experienced (Baker et al., 2021; Turanovic & Tasca, 2021). But, with one exception (Cochran, 2014), research rarely considers how visitation patterns over time are associated with recidivism. Identifying visitation patterns in different contexts and across populations allows for not only more accurate estimates of visits' effects, but can also help answer critical theoretical and policy questions. If, for example, visits near release are found to decrease recidivism, then this could be pointing towards the theoretical argument that visits are valuable for planning and organizing practical matters for an individuals' imminent reentry (Visher & O'Connell, 2012). Such a result is also useful for prison administrators, as it would suggest that efforts should be made to increase visitation in the period just before release.

Against this backdrop, the current study seeks to advance research on prison visitation and recidivism by examining whether the frequency and timing of visits (e.g., near release) influence post-release offending among individuals incarcerated in the Netherlands. This study uses group-based trajectory modelling to identify longitudinal visitation patterns among 541 men. Then, we use logistic regression models to test how these patterns relate to reconviction up to 2 years after release.

1.1. Theory and research on visitation patterns and recidivism

Visitation patterns can be defined by their frequency (e.g., consistent vs. sporadic) and timing (e.g., at the start or end of prison term). Individuals may receive visits during certain periods in prison and not at all in other periods. Some individuals may receive visits upon admission but then experience a slow decline in the frequency of these visits later on. Others may experience an increase in visits leading up to their release. Even for those who are consistently visited, the amount of visitation may differ from weekly, monthly, or even yearly visits. Such patterns – differing in frequency and timing – have been identified in five U.S. studies (Cihan et al., 2020; Cochran, 2012, 2014; Hickert, Tahamont, & Bushway, 2018; Young & Hay, 2020). All five studies also identified a relatively large group of individuals who did not receive visits while incarcerated. Yet, since the extant knowledge about visitation patterns in prison stems solely from the U.S., it remains unclear as to whether other patterns exist for different populations and contexts.

Even so, several theoretical arguments can be made that both the frequency and timing of visits may have differential implications for recidivism. To start, existing research has found that most individuals do not receive visits while incarcerated (Cihan et al., 2020; Cochran, 2012, 2014; Hickert et al., 2018; Young & Hay, 2020). There are several reasons why some individuals are not visited in prison, ranging from practical challenges (e.g., American and Dutch research show that far travelling distance impedes visits, see Berghuis et al., 2022; Clark & Duwe, 2017; McNeely & Duwe, 2020) to relational difficulties (e.g., social relationships may become strained as individuals engage in criminal behavior, Connor & Tewksbury, 2015). Moreover, some individuals even opt out of visits to spare family and friends emotional or financial hardship (Janssen, 2000; Pleggenkuhle, Huebner, & Summers, 2018). Even though some individuals are not visited, they may still have contact with family and friends in other ways such as phone calling or letter writing. However, visits are considered a vital bonding opportunity to maintain and cement relationships (Turanovic & Tasca, 2021), even though not all visiting experiences are positive nor beneifical (Meyers, Wright, Young, & Tasca, 2017; Turanovic & Tasca, 2019). Nevertheless, recent studies suggest that visits in and of themselves are important for reentry expectations and outcomes (Anderson, Cochran, & Toman, 2020; Hickert et al., 2019). For example, without such relationships, non-visited individuals may have difficulties finding housing, securing employment, and overcoming the negative labels (e.g., criminal, offender) and processes (e.g., discrimination in jobs) that individuals experience after being released from prison (Maruna & Toch, 2005; Visher et al., 2004), and consequently, are more likely to recidivate.

Conversely, there are individuals who consistently receive visits in prison (Hickert et al., 2018). Receiving visits throughout a prison term may be especially protective against harmful impacts of incarceration (De Claire & Dixon, 2017; Liebling, 1999). Also, receiving constant visits can help protect against adopting a criminal identity while incarcerated (Wolff & Draine, 2004). That said, experiencing at least some visitation – even if consistent – could still not be "enough" to produce such changes. For instance, receiving visits every other month may be less effective than when someone receives regular, weekly visits. Frequent visits namely allow individuals the opportunity to not only maintain, but also *strengthen*, their relationships to prosocial others which, according to the social bonds theory, help restrain individuals from committing crime (Hirschi, 1969). Also, if prosocial others are willing to come visit often, they may also be more willing (or able) to provide critical emotional or instrumental support in navigating the dramatic change in circumstances and uncertainty after release (Berg & Huebner, 2011; Christian, Mellow, & Thomas, 2006; Hickert et al., 2019; La Vigne, Naser, Brooks, & Castro, 2016). Moreover, it is also plausible that frequent visits improve behavior while incarcerated, as access to regular visits is often gained through incentive programs (Boudin, Stutz, & Littman, 2014; Hutton, 2017; Van Gent, 2013). Participating in these programs may encourage individuals to improve their behavior in order to not lose this privilege. In turn, they may be more likely to conform to rules after release. Consequently, the expectation is that individuals who receive frequent visits would have the lowest rates of recidivism.

Beyond whether and how often individuals receive visits, the timing or recency of visits may also be important for recidivism. Visits near release may be useful for planning and organizing practical matters for an individuals' imminent reentry. These visits could also help individuals feel more optimistic about their return (Visher & O'Connell, 2012), reduce anxiety about their return (Mancini et al., 2015), and help remind individuals of their social roles within their outside networks (Cochran & Mears, 2013; LeBel, 2012). Contrarily, if individuals experience a decrease in visits over time then relationships have likely weakened, making it difficult to access these contacts upon release.

Unfortunately, research providing empirical testing of visitation patterns on recidivism is scant. A study conducted by Cochran (2014) stands as the sole exception. Using prison administrative data on visits across the entire prison term, Cochran (2014) conducted group-based trajectory models for over 11,000 individuals incarcerated in Florida serving 8–17 months in prison. The results showed that visited individuals were less likely to recidivate than non-visited individuals, but different visitation patterns correlated with differing levels of recidivism. Individuals who were visited early and consistently were less likely to recidivate than non-visited individuals. Surprisingly, receiving visits near release was not associated with recidivism.

1.2. The current study

In sum, the association between prison visits and recidivism is complex as incarcerated individuals have diverse visiting experiences. One way of furthering our knowledge on how visits affect behavior and inform prison administrators who seek to facilitate visitation, is to identify which and when visits relate to recidivism. The current study contributes to this and, consequently, advances the literature on visitation effects by identifying common visitation patterns among

individuals incarcerated in the Netherlands and testing how these patterns relate to recidivism. Data from the Dutch Prison Visitation Study (DPVS) were used which include detailed measures of visitation, recidivism up to 2 years after release, as well as a long list of measures on individuals' characteristics known to be important for visitation and recidivism (including demographic characteristics, criminal history, and individuals' pre-prison social networks). Controlling for these covariates helps to account for possible selection effects into visitation.

Since the data were collected in the Netherlands, this study provides unique insight into visitation patterns in Dutch prisons. The Dutch Prison Service (*Dienst Justitiële Inrichtingen*) strives towards a positive, humane prison climate evidenced by prison regimes with daily schedules consisting of work, education, and recreation. Visitation is a standard part of this schedule. Individuals incarcerated in the Netherlands have the right to 1 h of visits a week with up to three unique visitors per visit. Extant studies demonstrate that most incarcerated individuals (estimates ranging from 74 to 89%) in the Netherlands receive visits while incarcerated (Berghuis et al., 2022; Hickert et al., 2019). Most visits are contact (in-person) visits, meaning individuals and their visitors can sit together with limited physical contact (i.e., brief kiss and/or hug at beginning and end of visit). Visiting conditions are thus relatively uniform across prisons and regimes. This last point is important as research indicates that differences in visiting conditions may impact visits' effects on recidivism (Turanovic & Tasca, 2021). In addition, even though Dutch penal policies became harsher in recent decades (Kruttschnitt & Dirkzwager, 2011), reentry is studied in a relatively mild penal climate (e.g., short sentences, humane prison climate, limited access to criminal records) compared to other Western countries. Together with this penal climate, the relatively high visitation rates indicate that a study of visitation effects in the Netherlands offers an interesting alternative to many Western countries and the bulk of visitation research that is largely based on American data.

2. Method

2.1. Dutch prison visitation study

This study uses data from the DPVS, a unique nationwide study which aimed to examine prison visitation from different perspectives and in all its variety. This study is a part of a large-scale national research project (the Life in Custody study) which periodically measures the quality of life in Dutch prisons using the Prison Climate Questionnaire (Bosma et al., 2020) among all persons incarcerated in the Netherlands (Van Ginneken, Palmen, Bosma, Nieuwbeerta, & Berghuis, 2018). All persons were individually approached and were invited to participate. The purposes of the study were explained and participants were handed paper surveys to complete in private, or were offered the opportunity to complete the survey with researcher assistance. Surveys were distributed and collected by research assistants from the university in the same week to ensure confidential treatment of the data. Participants were asked explicitly to consent for research participation and linking their survey data to administrative information, including visitation and criminal records.

For the present study, we use data from the 2017 data collection which combines collected survey data on individuals' social network (using procedures described above, for more details see Van Ginneken et al., 2018) and prison administrative data from a nationwide database ('*TULP Bezoek*') used to track inmate-level information (such as demographic characteristics and visitation data).While many Dutch prisons have administrative data on visitation, not all prisons record information about visits in this database and even when they do, the quality of the information recorded varies enormously. After site visits and inspection of the data, eight prisons were shown to have the most complete visitation data. These eight prisons are located in both urban as well as more rural areas throughout the Netherlands and house adult males from all regimes. In terms of cell capacity and staff-prisoner ratio these prisons are comparable to other Dutch prisons.

In addition to survey and prison administrative data, data for this study were extended with administrative data on criminal history and recidivism, provided by the Scientific Research and Documentation Center of the Ministry of Justice and Security. This database consists of detailed information on registered crimes and convictions and was made available for all DPVS participants who were released in 2017 and gave permission for obtaining administrative data.

2.2. Sample

All individuals housed in the eight selected prisons in the Netherlands between January and April 2017 were approached to participate ($N = 2095$). Some individuals ($N = 343$) were unable to be contacted due to language barriers, severe psychological problems or being placed in isolation during the data collection. Of those contacted, 355 individuals declined to participate. The most common reasons for not participating were: "lack of interest" ($N = 228$), "distrustful of research" ($N = 35$), and "almost being released" ($N = 10$). In total, 1397 agreed to participate and 1348 gave permission to use administrative data, such as visitation records, for research purposes. Since visitation records are not uniformly recorded for individuals in persistent offender regimes, these individuals ($N = 92$) were excluded from this study.

For the 1256 participants with available visitation data, 772 were released in 2017 and could be linked with data concerning recidivism. For the purposes of investigating visitation patterns in terms of frequency and timing, we excluded individuals who served <2 months in prison ($N = 225$). Moreover, six individuals served substantially longer prison terms (namely, 5–15 years in prison) than is common in the Netherlands. We therefore omitted these individuals from our sample. The final sample consists of 541 individuals. In comparison to the total population of the eight prisons at the time of the survey data collection, this sample is slightly younger (on average 35 years old versus 37, $t(2093) = 3.38$, $p < .001$; Cohen's $d = 0.17$), more likely to have been incarcerated for a property offense (x^2 (1, $N = 2095$) = 34.5, $p < .001$), and had served on average less time in prison (on average five versus 12 months, $t(2089) = 6.42$, $p < .001$; Cohen's $d = 0.32$) than those who were excluded from the analyses.

2.3. Measures

2.3.1. Recidivism

For the tests of how the visitation trajectories relate to recidivism, six measures of recidivism were used to account for the complexity of reoffending. Our measures span two time periods[1] and capture three levels of offense seriousness. In the short-term, recidivism was measured based on whether a participant was reconvicted within 6 months after release (0 = no, 1 = yes). Examining reconvictions within a relatively short period after release is important since the first months can be identified as essential for success in the community. Individuals often experience difficulties across various life domains within the first 6 months of release (Boschman, Teerlink, & Weijters, 2020), and statistics suggest that the risk of recidivism is especially high in the first months following release (Weijters et al., 2019). Long-term recidivism was measured based on whether a participant was reconvicted within 2 years after release (0 = no, 1 = yes). Observing recidivism up to 2 years allows for a conservative test of visitation effects, as prior research has found that visits' effects may weaken over time (Mitchell et al., 2016). All participants had an equal time at risk using these recidivism measures.

In addition, three levels of seriousness were investigated:

[1] We additionally ran analyses with a measure of reconviction within one year of release. The results, which can be requested from the first author, yielded similar conclusions as our models on long-term recidivism (i.e., within two years of release).

reconviction for all offenses (0 = no, 1 = yes), reconviction for a serious offense (0 = no, 1 = yes), and reconviction for a very serious offense (0 = no, 1 = yes) respectively within 6 months and 2 years of release. All offenses includes all types of offenses, including less serious offenses such as theft or vandalism. Serious offenses include any offense with a maximum sentence of 4 years' incarceration and higher, or any offense that allows for the imposition of pretrial detention. Very serious offenses include any offense with a maximum sentence of 8 years' incarceration and higher.

2.3.2. Visitation patterns

Using prison administrative records from *'TULP Bezoek'* individuals' visitation experiences in the months prior to release were reconstructed. The administrative data indicates on which date(s) each individual received a personal visit. This was used to record the number of visits an individual received in a given "month". Each visit with a unique combination of visitor and visit date were counted as a separate visit. To illustrate, two unique visitors on one date equaled two visits, like one unique visitor on two dates also equaled two visits. Following prior research (e.g., Cochran, 2014; Hickert et al., 2018), months were standardized to include 4 weeks or 28 days so that a consistent number of weekend days were included each month.

Visitation events were analyzed for up to 24 months prior to release. This observation period was chosen since the vast majority of individuals incarcerated in the Netherlands spend <2 years in prison (De Looff, Van de Haar, Van Gemmert, & Bruggeman, 2018). Since we are interested in the recency of visits prior to release, we began coding the number of visits in each month preceding release (up to 24 months). The month of release[2] was therefore considered 'month 0'. Then, for each month prior to release the total number of visits was recorded. For example, if an individual received three visits in the last month before release, then that individual scores 3 on the '-1 month to release' variable.

2.3.3. Control variables

We controlled for several individual characteristics known to be correlated with visitation and recidivism. To start, we included some measures of pre-prison social networks measured with survey data. First, we included a binary measure of whether individuals reported having a partner (0 = no, 1 = yes). Then, we included three measures concerning the amount of contact individuals had with partner, family, and friends prior to incarceration. Participants indicated whether they had no, monthly, weekly, or daily contact with each relationship. We created three separate binary measures of at least weekly contact with partner (0 = no, 1 = yes), at least weekly contact with family (0 = no, 1 = yes), and at least weekly contact with friends (0 = no, 1 = yes). This gauges whether individuals had preexisting sources of social support, which has shown to be a predictor of visitation and post-release success (Atkin-Plunk & Armstrong, 2018).

From administrative data variables were included on age (in years, this pertains to an individuals' age during the 2017 data collection[3]), nationality (0 = non-Dutch, 1 = Dutch), time served (i.e., the number of months between entry into a Dutch penitentiary and release), the total number of prior incarcerations in the past 5 years, and index offense (including: property offense [reference category], violent offense, sex offense, drugs offense, or other offense). Controlling for these characteristics is important since it has been routinely documented that demographic and criminal characteristics are related to whether and how often individuals receive visits (e.g., Cochran, Mears, & Bales, 2017; Tewksbury & Connor, 2012). For example, extant Dutch research demonstrates that Dutch nationals are more likely to receive visits and are visited more often than non-Dutch nationals (Berghuis et al., 2022). Moreover, many of the demographic and criminal characteristics found to be associated with visits are *also* associated with recidivism. For example, individuals with a more extensive criminal history have consistently been found to be less likely to receive visits, but more likely to recidivate (e.g., Blumstein, Farrington, & Moitra, 1985; Cochran et al., 2017).

2.4. Analytic strategy

The analyses proceeded in two stages. First, to identify longitudinal visitation patterns, group-based trajectory models were employed using STATA Trajectory Procedure in STATA 2013 (Jones & Nagin, 2013). Parameters defining the level and shape of visitation trajectories were allowed to vary freely across groups. When estimating trajectories, we excluded individuals who were never visited ($N = 113$). This was done because a) adding individuals who never received visits would only add a flat trajectory to the model (Broidy et al., 2015; Ferrante, 2013), b) there is the risk that individuals with few visits would be pulled into the non-visited group, complicating a comparison between non- and low-visited individuals. For the trajectory models, months served in prison prior to release were used as observation points, and the outcome was a count measure of the (unique) number of visits in a given month.

Due to variations in the number of months served in prison between individuals (see Table 1; the sample served on average 10 months in prison), there is also variation in the number of observation periods each contributes. Since all individuals spent at least 2 months in prison, scores on '-1 month to release' and '-2 months to release' are complete for all visited individuals included in the trajectory analyses ($N = 428$). Around

Table 1
Descriptive statistics ($N = 541$).

	Min	Max	%	M	SD
Reconviction within 6 months					
All	0	1	26	–	–
Serious	0	1	21	–	–
Very serious	0	1	4	–	–
Two years					
All	0	1	50	–	–
Serious	0	1	42	–	–
Very serious	0	1	11	–	–
Number of visits (per month)	0	18.20	–	2.37	2.67
Has a partner	0	1	55	–	–
Weekly contact prior to incarceration with					
Partner	0	1	55	–	–
Family	0	1	67	–	–
Friends	0	1	54	–	–
Age (during data collection, in years)	19	81	–	35.19	11.63
Nationality (Dutch)	0	1	69	–	–
Time served (months)	2.07	46.93	–	9.70	8.36
Number of prior imprisonments (in past 5 years)	0	17	–	1.59	2.27
Index offense					
Property	0	1	38	–	–
Violent	0	1	28	–	–
Sex	0	1	5	–	–
Drugs	0	1	16	–	–
Other	0	1	13	–	–

[2] For most of our sample, month of release means release from a closed prison to society. Some individuals were, however, first released from a closed prison to an open regime (and then into society). Since visits are not a part of the programming in open prisons (as individuals are able to see family and friends on furlough), we considered entrance into an open regime as 'released'. This was the case for 44 individuals in the sample (8.1%). To account for the fact that these individuals may have had less time at risk for recidivism, we controlled for whether individuals were released into an open regime in the logistic regression models. The multivariate results (not shown but can be requested from the first author) yielded the same conclusions.

[3] Since our sample consists of individuals who were released in 2017, the recorded age is similar to age at release.

22% of this sample served 2–4 months in prison, meaning visit data was available for 335 individuals at '-4 months to release'. Another 18% of the sample spent 4–6 months in prison, such that 256 individuals still contributed to the trajectories at '-6 months to release'. Then, turning to what is considered 'long-term' prison stays in the Netherlands (Wermink, 2014), almost one-third of the sample served 6 months up to 1 year in prison. Thus, visit data was available for 118 individuals at '-12 months to release'. After 1 year to release, the visitation trajectories are based on a small number of individuals. At the end of our observations ('-24 months to release') visit data was available for 27 individuals. Importantly, since we know in which month an individual entered prison, the records for months in the observation period exceeding entrance into prison were set as missing (and thus did not contribute to estimating the trajectories).

We identified the best fitting model based on cubic shaped trajectories, and a count-specific zero-inflated Poisson regression model. In doing so, we were able to prevent disjunct changes in the modeled visitation patterns caused by months without any visits (Hickert et al., 2018). In line with Nagin's recommendations (2005), the optimal number of groups was selected based on the following criteria: the Bayesian Information Criterion (BIC), Akaike Information Criterion (AIC), average posterior probabilities (AvePP), and odds of correct classification (OCC). In addition, Wald tests were performed to test for group differences in terms of intercepts and cubic slopes across trajectory subgroups.

After identifying visitation patterns, we assigned individuals to subgroups based on their maximum posterior group probabilities and used group membership – with non-visited individuals denoted as a separate group – to estimate the effects of these longitudinal visitation trajectories on the likelihood of reconviction within 6 month and 2 years after release. Since the outcome is dichotomous, logistic regression models were used. The multivariate models include all control variables described in the 'measures' section. Notably, squared variables of age and time served were tested, since these variables may have a non-linear relationship with recidivism, and were omitted if not significant Table 2).

3. Results

3.1. Descriptive statistics

Table 1 provides a descriptive overview of the 541 men included in the analyses. Based on registered crime, 26% of the sample was reconvicted, 21% for a serious offense, and 4% for a very serious offense within 6 months of release. Within 2 years of release, half of the sample was reconvicted (respectively 42% for a serious offense and 11% for a very serious offense). In terms of visits, individuals in the sample received on average 2.37 visits per month.

3.2. Identifying longitudinal visitation patterns

To select the optimal number of groups, we began with estimating a one-group model and proceeded up to a seven-group model. Table 2 shows the model fit statistics for all seven models. Based on examination of the models, we opted for the model with four groups as it revealed unique information about group members' frequency and timing of visitation; information that was lost in the three-group model. Average posterior probabilities (exceeding 0.79) and OCC values (exceeding 14) of the four-group model indicated adequate assignment accuracy[4] (Nagin, 2005). Furthermore, Wald's tests were significant for each of the four trajectory subgroups, indicating that each group differed in developmental pattern of visitation (results from the Wald tests can be requested from the first author). A five-group model was not preferred as the fifth subgroup consisted of a relatively small share of individuals who were conceptually embodied by a larger trajectory in the four-group model (namely individuals who experience a decrease in visits in the months before release). Finally, the six- and seven-group models were not preferred as the additional subgroups only further distinguished between groups with very slight increases or decreases in the months before release, and thus did not add to the substantive story of visit patterns.

In addition to the a-priori defined group of individuals who were never visited (21%, $N = 113$), the four-group model shows wide variety in the average number of visits in a given month (see Fig. 1). One group, which we call 'sporadically visited' (18%, $N = 99$), receives on average one visit every 2 months. This pattern remains consistent throughout the observation period. Another group labelled 'often visited' (14%, $N = 75$) receives between seven to nine visits per month, which remains consistent up until release. While visitation patterns are relatively stable for the 'sporadically visited' and 'often visited' groups, Fig. 1 shows two other groups that experience fluctuations in visitation patterns in the months preceding release. For the 'increasingly visited' group (27%, $N = 144$), the number of visits increases in the months before release (on average three to five visits in the months before release), while the 'decreasingly visited' group (20%, $N = 110$) experiences a decrease in visits in the months before release (on average one visit per month in the months before release).

3.2.1. Sensitivity analyses

As noted earlier, our sample spent a diverse amount of time in prison. To address this, we performed robustness checks by separating our sample into four cohorts based on the amount of time served in prison (2–4 months, 4–6 months, 6–12 months, and 1–4 years) and separately analyzed their visitation trajectories (the trajectory models can be requested from the first author). The resulting trajectories are similar to the four-group model presented above, although trajectories distinguishing fluctuations in visits (e.g., 'decreasingly visited' and 'increasingly visited') were only found for cohorts who spent at least 6 months in prison.

We also examined the proportion of individuals from each cohort assigned to each visitation trajectory (see Table 3). As shown, the largest percentage of individuals who were never visited are in the cohort serving 2–4 months in prison (36%). This is in line with prior Dutch research which suggests that individuals who serve short sentences may choose to opt out of visits, to spare family and friends the hardship of visiting and seeing them in prison (Janssen, 2000). Notable too is that individuals who served between one and 4 years in prison have the highest prevalence in the 'sporadically visited' and 'decreasingly visited' groups, which may suggest that sustaining visits becomes difficult over time. In terms of group assignment, one of the most common patterns across the cohorts was the 'increasingly visited' group (ranging from 15 to 34%). Finally, across the cohorts 13–15% of individuals were assigned to the 'often visited' group.

Taken together, we did not find very different patterns among the separate cohorts than the four-group model presented for the full sample. Moreover, the distribution of individuals in each cohort across the four-group model is logical and in line with prior research. This substantiates that our findings are relevant for the full sample, with a caveat that conclusions concerning the 'decreasingly visited' and 'increasingly visited' group are most applicable to individuals who spent at least 6 months in prison. Thus, although attrition led to decreasing power with the amount of time spent in prison, it seems that the potential biases due to attrition are not likely a threat to the validity of our trajectories.

3.3. Relation between visitation patterns and recidivism

Now we consider whether these distinctive visitation patterns

[4] The BIC and AIC did not reach a minimum in the current study, and therefore failed to clearly identify the best solution (see also Blokland, Nagin, & Nieuwbeerta, 2005).

Table 2
Model fit statistics of one- to seven-group ZIP models.

Model	BIC	2(ΔBIC)	AIC	Lowest AvePP	OCC	Group membership %
1	−12,637.89	–	−12,629.78	1	–	100
2	−9523.25	6229.28	−9504.98	0.98	68, 45	48, 52
3	−8810.73	1425.04	−8782.32	0.94	48, 20, 59	34, 42, 24
4	**−8455.82**	**709.82**	**−8417.26**	**0.87**	**19, 36, 23, 124**	**26, 23, 33, 18**
5	−8296.21	319.22	−8247.51	0.79	32, 19, 20, 24, 108	10, 23, 22, 29, 16
6	−8212.29	167.84	−8153.43	0.81	38, 26, 40, 24, 14, 99	16, 18, 9, 16, 27, 14
7	−8180.35	63.88	−8111.35	0.76	175, 17, 25, 22, 16, 52, 373	5, 14, 15, 17, 29, 15, 5

Note. ΔBIC indicates the relative change in BIC values. The percentages reported for group membership pertain to the subset of individuals who received at least one visit ($N = 428$).

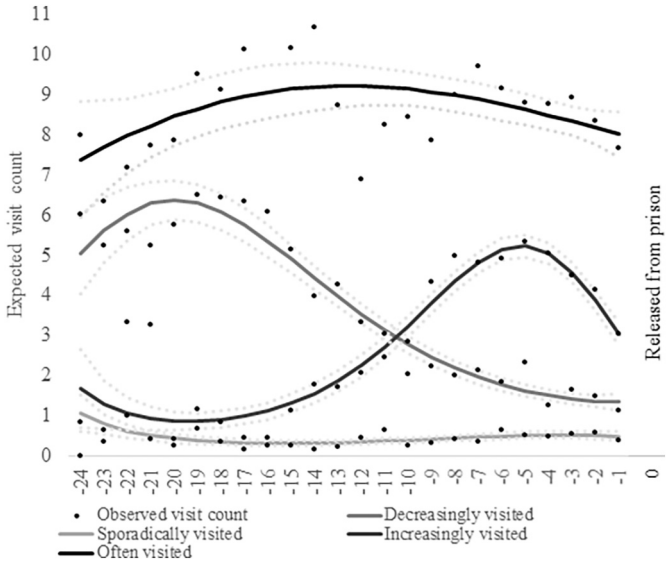

Fig. 1. Longitudinal visitation trajectories for the four-group model.

predict the likelihood of reconviction within 6 months and 2 years after release. Before preceding to the logistic regression models, bivariate associations between the different visitation trajectories and reconviction were examined. Table 4 shows the comparison between the four visitation trajectories and the 'never visited' group.

3.3.1. Bivariate analyses

The results shown in Table 4 indicated that reconviction for all and serious offenses were significantly associated with visitation trajectory group membership within 6 months and 2 years after release (respectively, $\chi^2 = 29.03$, $p < .001$; $\chi^2 = 25.97$, $p < .001$). For instance, the group that was often visited was least likely to be reconvicted (11%) when compared to the group that was never visited (39%) (this was also true for serious reconvictions, see Table 4). When compared to the 'never visited' group, the three groups with the highest visitation frequency (i.e., 'often visited', 'increasingly visited', and 'decreasingly visited') were significantly less likely to be reconvicted for any offense as well as a serious offense (the pairwise comparisons are not shown, but can be requested from the first author). Trajectory group membership was not associated with very serious reconvictions, likely due to the low incidence of very serious reconvictions.

Within 2 years of release, all and serious reconvictions were significantly associated with visitation trajectory group membership (respectively, $\chi^2 = 16.27$, $p < .01$; $\chi^2 = 14.84$, $p < .01$). Pairwise comparisons demonstrated, however, that only the 'often visited' group significantly differed from the 'never visited' group on all reconvictions and serious reconvictions. For this group nearly one-third (29%) was reconvicted, compared to approximately 55% of individuals who were never visited while incarcerated. None of the trajectory groups were associated with a very serious reconviction within 2 years.

3.3.2. Logistic regression models

Next, we examined the multivariate relationship between the visitation trajectory groups and reconviction. Here we omitted very serious reconvictions as a separate category since the trajectory groups were not associated with very serious reconvictions at the bivariate level. Table 5

Table 3
Group assignment percentages by cohort.

		Never visited	Sporadically visited	Decreasingly visited	Increasingly visited	Often visited
Cohorts	*N*	%	%	%	%	%
2–4 months	145	36	8	14	28	15
4–6 months	97	19	18	17	34	13
6– 12 months	169	18	17	23	30	13
1–4 years	130	9	33	28	15	15

Table 4
Associations between visitation trajectory group and reconviction outcomes.

	N	Reconviction within 6 months			Reconviction within 2 years		
		All	Serious	Very serious	All	Serious	Very serious
		%	%	%	%	%	%
Never visited	113	39	30	5	55	46	9
Sporadically visited	99	37	33	7	57	49	15
Decreasingly visited	110	22	19	5	50	45	15
Increasingly visited	144	20	16	1	53	42	10
Often visited	75	11	7	1	29	23	8

Table 5
Logistic regression of reconviction on visitation trajectory groups and controls ($N = 541$).

	Reconviction within 6 months				Reconviction within 2 years			
	All		Serious		All		Serious	
	OR	CI	OR	CI	OR	CI	OR	CI
Visitation trajectory groups								
Never visited	Ref		Ref		Ref		Ref	
Sporadically visited	1.11	[0.58–2.11]	1.40	[0.71–2.75]	1.25	[0.66–2.34]	1.34	[0.72–2.50]
Decreasingly visited	0.59	[0.31–1.15]	0.79	[0.39–1.60]	1.13	[0.62–2.07]	1.40	[0.77–2.56]
Increasingly visited	0.44*	[0.23–0.83]	0.52	[0.26–1.05]	1.14	[0.64–2.01]	1.11	[0.63–1.97]
Often visited	0.29**	[0.12–0.71]	0.27*	[0.09–0.79]	0.54	[0.26–1.10]	0.60	[0.29–1.26]
Control variables								
Has a partner	1.44	[0.79–2.63]	1.31	[0.70–2.47]	0.99	[0.58–1.68]	1.00	[0.59–1.70]
Weekly contact prior to incarceration with								
Partner	0.69	[0.38–1.27]	0.67	[0.40–1.43]	1.01	[0.60–1.72]	1.00	[0.59–1.69]
Family	1.12	[0.66–1.92]	0.99	[0.56–1.73]	1.00	[0.61–1.63]	0.87	[0.54–1.41]
Friends	0.81	[0.49–1.34]	0.67	[0.39–1.14]	0.81	[0.52–1.26]	0.70	[0.45–1.09]
Age (during data collection, in years)	0.97*	[0.95–0.99]	0.97*	[0.95–0.99]	0.97**	[0.96–0.99]	0.98*	[0.96–1.00]
Nationality (Dutch)	1.00	[0.99–1.01]	1.01	[1.00–1.02]	1.00	[0.99–1.01]	1.00	[0.99–1.01]
Time served (months)	0.97	[0.95–1.01]	0.98	[0.95–1.01]	0.98	[0.95–1.00]	0.99	[0.96–1.01]
Number of prior imprisonments (in past 5 years)	1.39***	[1.25–1.54]	1.36***	[1.23–1.51]	1.52***	[1.34–1.71]	1.41***	[1.27–1.57]
Index offense								
Property	Ref		Ref		Ref		Ref	
Violent	1.18	[0.75–1.85]	1.27	[0.79–2.04]	1.38	[0.94–2.04]	1.24	[0.85–1.83]
Sex	1.09	[0.42–2.78]	2.02	[0.77–5.25]	0.68	[0.32–1.45]	0.97	[0.46–2.02]
Drugs	0.87	[0.48–1.59]	0.71	[0.36–1.43]	0.90	[0.57–1.44]	0.69	[0.42–1.13]
Other	0.90	[0.38–2.13]	0.55	[0.20–1.54]	1.18	[0.59–2.36]	1.20	[0.60–2.39]
Constant	0.95		0.79		1.88		1.25	
Nagelkerke R^2	0.24		0.24		0.25		0.22	

Note. *$p < .05$, **$p < .01$, ***$p < .001$.

shows the resulting estimates from the logistic regression models which includes the trajectory group and all individual characteristics.

As can be seen in Table 5, the 'often visited' and 'increasingly visited' groups were less likely to be reconvicted within 6 months, even after controlling for important individual characteristics, including measures of individuals' pre-prison social networks. Individuals who consistently received a high number of visits (OR = 0.29 [CI 0.12–0.71]) and who were increasingly visited (OR = 0.44 [CI 0.23–0.83]) had a significantly lower risk of reconviction within 6 months than non-visited individuals. Effect sizes were smaller for serious reconvictions but still significant for those who were often visited (see Table 5). No significant associations were found between being in the 'sporadically visited' and 'decreasingly visited' groups and reconviction within 6 months. Moreover, none of the trajectory groups were associated with reconviction within 2 years.

In terms of control variables, none of the measures of pre-prison social networks emerged as having a significant relation with recidivism. The other control variables, however, generally show significant effects on recidivism in the expected direction. For instance, individuals with less extensive incarceration history are less likely to recidivate. Since the coefficients presented in the bivariate analyses have changed compared to the logistic regression models, this suggests that the multivariate analyses are at least accounting for the potential selection biases that stem from the included characteristics.

4. Discussion

Prison officials worldwide have been encouraged to implement prison visits based on the belief that visits will improve reintegration. The consistency of empirical studies in supporting this premise provides justification for such policy recommendations (Mitchell et al., 2016). Yet, just as consistently, scholars find that the relationship between visitation and recidivism is heterogeneous (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Cochran, Barnes, Mears, & Bales, 2020). Identifying this heterogeneity is crucial for furthering empirical knowledge on visits' effects and for establishing whether, how, and in which ways prison officials can stimulate visitation. Among our sample of Dutch males, we find that that visitation patterns in Dutch prisons are highly diverse. Next to an a-priori defined group 'never visited', four visitation patterns could be identified using group-based trajectory models: sporadically visited, decreasingly visited, increasingly visited, and often visited. These distinctions in terms of both frequency and timing of visits are important, as it does not necessarily follow that receiving visits in prisons provides substantial improvements in post-release offending behavior. Considering the results that were presented, three broad conclusions are warranted.

First, the identified visitation patterns found in this study seem comparable to those found in prior U.S. research. This is striking given the differences in incarceration and visitation contexts between the U.S. and the Netherlands. Nevertheless the similarity between the identified visitation patterns provides some empirical support for the generalizability of these patterns across contexts, which suggests that these patterns might be more universal, and perhaps informative for other incarceration and visitation contexts in Western Europe. Notably, one difference is apparent: while extant American studies find that most individuals do not receive visits during their incarceration (Cihan et al., 2020; Cochran, 2012, 2014; Hickert et al., 2018; Young & Hay, 2020), we find that the majority of individuals were visited (79%).

Second, our results suggest – similarly to Cochran (2014) – that sustained, frequent visits are associated with the lowest risk of reconviction, which could mean that visits may prevent (serious) offending. While reconviction data is not free from bias, a reconviction means that there is sufficient evidence or offense severity to warrant further processing. In fact, the meta-analysis by Mitchell et al. (2016) demonstrated that prison visitation had stronger effects on reconviction and reincarceration than rearrests. This review also highlighted that visits' effects may attenuate over time. We found some evidence of this as the visitation trajectory groups were no longer associated with our measure of long-term recidivism. There are several possible reasons for this (Bahr, Harris, Fisher, & Armstrong, 2010; LeBel, Burnett, Maruna, & Bushway, 2008; Visher et al., 2004), including that social network may mainly work as a "landing spot" after release, as many individuals turn to family for help once released. While family members may be welcoming, a

prolonged reliance on family for instrumental support may be difficult and increase tensions (Mowen, Stansfield, & Boman, 2019). Another plausible explanation for the lack of long-term effects is potential differences in the expectation and actual provision of practical and emotional support that families can provide for individuals when returning home (Berg & Huebner, 2011). Nevertheless, even if these visits may only reduce risks of recidivism in the short-term, any reduction can be considered beneficial as recidivism risks are especially high in the first months following release (Weijters et al., 2019).

Third, a key finding was that visits near release were related to reductions in short-term recidivism. This suggests that visits may be particularly helpful in planning for an individuals' imminent reentry or supporting with the emotional or identity related issues of return. The 'decreasingly visited' group did not significantly differ from the never visited group on reconviction within 6 months and up to 2 years after release, which is in contrast with results from Cochran (2014), who found that visits early on in a prison term were important for reducing the risk of recidivism. It is possible that visits early in the prison term may be more important in an American context as individuals are incarcerated substantially longer than in the Netherlands. For long-term prison stays, visits early on may be especially important to combat adverse prison effects (such as strain), which could have long-term implications. Subsequent research should further examine the consequences of the timing of visits on behavioral outcomes.

Taken together, these findings emphasize the heterogeneous nature of prison visitation. Our findings show that frequency and timing is important, but other aspects of visitation experiences may explain some of the results found here. For example, our finding that consistent, frequent visits are associated with reductions in recidivism may also be related to the quality of the relationships or the visits. Indeed, in an exploratory analysis we observed that individuals in the 'often visited' group were more likely to have a partner with whom they had weekly contact prior to incarceration than individuals in the never visited group. Moreover, the fact that the 'decreasingly visited' group was not associated with recidivism could also be due to the quality of relationships. It is possible that this trajectory signifies that relationships are complicated for these individuals, which could make visits more unstable, upsetting, and, consequently, less effective (Beckmeyer & Arditti, 2014; Tasca, Mulvey, & Rodriguez, 2016; Turanovic & Tasca, 2019). Thus, the quality of relationships and relatedly, the content and quality of the visits warrant further empirical attention, especially as research shows that visit experiences can be both positive and negative (Meyers et al., 2017; Turanovic & Tasca, 2019).

Researchers should also continue to better understand how different visitors may influence visitation effects. While a few studies have investigated how different types of visitors relate to recidivism (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Duwe & Clark, 2013; Duwe & Johnson, 2016), results are conflicting. To give one example, Atkin-Plunk and Armstrong (2018) found that visits from romantic partners were associated with reductions in recidivism, whereas Duwe and Clark (2013) found that visits from spouses had little impact on reentry outcomes. Untangling which types of relationships are most impactful can help answer critical theoretical and policy questions concerning visits' effects. Using a multi-group multi-trajectory approach could help account for both the longitudinal patterns of visits found here, as well as the type of visitors.

Given the results of this study, policy measures aimed at providing opportunities for incarcerated individuals to be visited more frequently or consistently are warranted. Prior Dutch and American research indicate that the number of visits individuals receive will likely increase when individuals are placed in prisons close to their social network (Berghuis et al., 2022; Clark & Duwe, 2017; McNeely & Duwe, 2020). Additionally, the results of this study suggest that investments in increasing visits near release may be promising, but as it remains unclear as to why these visits are important, more research is needed. It is possible that intensifying visits with other important social groups (such as community volunteers) or probation services may be useful to keep individuals informed of the sources of support available to them upon release. With that said, purely increasing visit possibilities may not necessarily reduce recidivism, as visits are not uniformly positive, nor are all visitors supportive. As such, visits can even have harmful effects (e.g., Benning & Lahm, 2016; Siennick, Mears, & Bales, 2013), which should be considered alongside the calls from many scholars to expand visit opportunities. The crux for prison administrators is seeking a balance between encouraging supportive visits, while also maintaining safety and order in prison. The important task for future work is therefore to unpack what kinds of visit is a 'good' one and what circumstances facilitate 'beneficial' visiting.

Finally, there are some limitations worth noting. First, although our rich data allowed us to account for known differences between visited and non-visited individuals, which substantially reduced selection bias, our analyses only account for observable confounding influences and the small (sub)samples limit the statistical power of our models. Future studies therefore ought to further confront the issues of selection bias by using large samples and analytical strategies such as instrumental variable analyses to increase confidence in the results.

Second, and relatedly, while we accounted for important measures of individuals' pre-prison social networks, these measures do not capture the quality of the relationships, which may be more consequential than the frequency of contact (Atkin-Plunk & Armstrong, 2018). In addition, the quality of these relationships during reentry may also be essential as a prolonged (over)reliance on social networks may lead to relationship dissolution as social network members grow tired of providing support. Using more dynamic measures of individuals' social networks both prior to incarceration, as well as during the reentry experience, has the potential to further untangle some of the results found here. Also, we were unable to include measures of an individuals' socioeconomic status. This seems important as visits often require the availability of economic resources and individuals who come from families and communities that lack such resources may be less likely to receive visits (Cochran et al., 2017; Cochran, Mears, Bales, & Stewart, 2016). Moreover, lack of such resources may also make it more difficult for individuals to find housing and employment, perhaps making these individuals more vulnerable to reoffend (Berg & Huebner, 2011; Christian et al., 2006).

Third, as our sample served on average 10 months in prison, our trajectory analyses included very few individuals at the end of our observation period. This could lead to biased estimates as the composition of the groups may change over time, therefore the trajectories should be interpreted cautiously. That said, when we separated our sample based on their differing lengths of time in prison, we did find similar trajectories. However, the trajectories 'decreasingly visited' and 'increasingly visited' seem most applicable to individuals who have spent at least 6 months in prison.

On a related note, since our sample served on average 10 months in prison, our findings are most applicable to relatively short incarceration. Possibly, our study underestimates the effects of visits for individuals serving longer prison terms, because even small amounts of visits may be important for these individuals as social isolation may pose a greater risk for those who serve long prison sentences. Alternatively, longer stays in prisons could have more adverse effects on an individual, which may counteract any benefits of contact with those outside. Thus, investigations among individuals serving diverse amounts of time in prison is warranted.

Fourth, we investigated six measures of reconvictions and although official records have been considered valid indicators of offending behavior (Farrall, 2005), they potentially underestimate actual criminal behavior. Also, reconviction records are not without bias, especially as individuals with a criminal record are easier targets for the criminal justice system (Hirschfield & Piquero, 2010). Future research should therefore evaluate how visitation relates to all aspects of criminal justice processing.

These limitations notwithstanding, the current study demonstrates

that when we account for differences in visitation experiences (in terms of frequency and timing) and potential selection effects, visit effects are modest. Nevertheless, the results are striking for a context in which individuals are incarcerated for short periods of time and where prison regimes are considered to have a rehabilitative focus (although the Dutch prison climate has become more punitive in recent years, Kruttschnitt & Dirkzwager, 2011). It is also possible that these modest effects are a result of testing visits' effects on recidivism, which is a rather limited measure of post-release success. Recidivism is only one outcome of a process which demands many changes from individuals and these measures capture not only individual behavior, but also reflect the decision making of the criminal justice system (Blinded Citation; Wright & Cesar, 2013). Not only that, but theoretical arguments suggest that visits may have broader benefits for preparing individuals for release (for example, by increasing participation in prison programming, Meyers et al., 2017) and emotional and instrumental support after release, yet the overwhelming focus of empirical study is on recidivism (with a few exceptions, see Brunton-Smith & McCarthy, 2017; Hickert et al., 2019). Explorations of whether and how receiving visits – in all its complexity – impacts the emotional and practical challenges individuals face during reentry seem fruitful and may even reveal that visits' effects are more profound once we understand when, which, for whom, and in what ways visits are effective.

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