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Prison Visitation and Mental Health in Detained Young Adults

Theory and research indicate that the maintenance of interpersonal relationships with family and friends can improve the well-being and behavior of detained persons. However, receiving visits in prison may also increase stress and anxiety, thereby negatively affecting adjustment to prison life. Based on a sample of 75 young adult males in Portugal who were evaluated at the 1st, 3rd, and 6th month after entry in prison, the present study explored the reciprocal relationship between visitation and mental health, as well as the longitudinal course of visitation rates during incarceration and individual characteristics associated with receiving visits. Regression analyses revealed that the number of visits declined over the first six months in the institution. Prison visits were positively related to a lower educational level, Portuguese nationality, mental treatment history, and a less developed criminal history. In addition, a higher level of mental health symptoms was associated with more subsequent prison visits in the first three months in prison, but visits were not associated with subsequent mental health symptoms. The results of this study suggest that detained young adults presenting a higher level of mental health symptoms may be more likely to be visited by their family and friends during the initial period of incarceration.

Keywords: prison, mental health, visitation, social support, young adults

Gefängnisbesuche und psychische Gesundheit inhaftierter junger Erwachsener

Theorie und Forschung deuten darauf hin, dass die Aufrechterhaltung zwischenmenschlicher Beziehungen zu Familie und Freunden das Wohlbefinden und Verhalten inhaftierter Personen verbessern kann. Allerdings kann der Empfang von Besuchen in der Haftanstalt auch Stress und Angstzustände verstärken und dadurch die Anpassung an das Gefängnisleben negativ beeinflussen. Auf der Grundlage einer Stichprobe von 75 jungen erwachsenen Männern in Portugal, die im ersten, dritten und sechsten Monat nach der Einlieferung in die Haftanstalt evaluiert wurden, untersuchte die vorliegende Studie die wechselseitige Beziehung zwischen Besuch und psychischer Gesundheit sowie den Längsverlauf der Besuchshäufigkeit während der Haft und die individuellen Charakteristika, die mit dem Besuch in der Haft verbunden sind. Regressionsanalysen ergaben, dass die Zahl der Besuche in den ersten sechs Monaten in der Anstalt zurückging. Die Gefängnisbesuche standen in positivem Zusammenhang mit einem niedrigeren Bildungsniveau, der portugiesischen Staatsangehörigkeit, der Geschichte der psychischen Behandlung und einer weniger entwickelten kriminellen Vorgeschichte. Darüber hinaus war ein höheres Maß an psychischen Gesundheitssymptomen mit mehr nachfolgenden Gefängnisbesuchen in den ersten drei Monaten der Haftzeit verbunden. Allerdings gingen die Besuche nicht mit nachfolgenden psychischen Gesundheitssymptomen einher. Die Ergebnisse dieser Studie deuten darauf hin, dass inhaftierte junge Erwachsene, die ein höheres Maß an psychischen Gesundheitssymptomen aufweisen, während der ersten Zeit der Inhaftierung mit größerer Wahrscheinlichkeit von ihrer Familie und ihren Freunden besucht werden.

Schlagwörter: Gefängnis; psychische Gesundheit; Besuche; soziale Unterstützung; junge Erwachsene

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1. Prison Visitation and Mental Health in Young Adult Persons

The initial period of incarceration is associated with increased distress due to the accumulation of stressors such as separation from loved ones and the deprivations associated with the prison environment (Harvey, 2007; Kuanliang, Sorensen, & Cunningham, 2008; Monahan, Goldweber, & Cauffman, 2011; Zamble & Porporino, 1988). Since detained young adults report high rates of mental health symptoms upon arrival in prison (Colins et al., 2010; Golzari, Hunt, & Anoshiravani, 2006; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002), the initial period of confinement may be especially relevant for their subsequent well-being and behavior in prison (Monahan et al., 2011). Social support, in the form of visits from family and friends, may help to improve mental health and adjustment to prison life. However, findings on this topic have been mixed.

Furthermore, little is known about the factors that contribute to visitations over time in prison and the underlying mechanisms of how and why visitations influence detained persons' mental health (Cochran et al., 2018; Cochran & Mears, 2013; Cochran, Mears, & Bales, 2017; Hutton, 2016; Meyers, Wright, Young, & Tasca, 2017; Siennick, Mears, & Bales, 2013). Of special importance, the majority of research on the impact of social support during incarceration has been limited to adult populations and, therefore, little is known about how social support in the form of face-to-face visits might impact the mental health of detained young adults (Monahan et al., 2011).

This is an important gap considering that the age range 18-25 is a distinct period demographically, subjectively, and in terms of identity exploration (Arnett, 2000). In this phase of young adulthood, the prevalence of several risk behaviors peak (e. g., unprotected sex, substance use, driving at high speeds or while intoxicated), associated with sensation seeking behaviors before assuming the responsibilities of adult life. Furthermore, in this phase of emerging adulthood, the prevalence of serious mental health problems, such as depression and substance use disorder is increased (Arnett, 2007). Struggles may be even higher when people come from vulnerable and disadvantaged populations (Arnett, 2007), as is often the case in prison settings where persons generally come from disadvantaged social classes and have low social support (Adams, 1992). Additionally, detained young adults tend to be more vulnerable to social isolation and to depend more on social ties than adults do (Cochran, Barnes, Mears & Bales, 2018; Lindsey, Mears, Cochran, Bales, & Stults, 2017). Given these special features of young adulthood, it may very well be that adjusting to prison life, receiving visits in prison, and the relationship between visitation and mental health works differently in young adults when compared to adults.

Therefore, based on a sample of detained young adults in Portugal who were assessed repeatedly during their first six months in a prison specialized for young males, the present study investigated the longitudinal course of young adult persons' visitations during incarceration, individual characteristics associated with receiving visits in prison, and the reciprocal relationship between prison visits and mental health symptoms.

1.1.1. Visitations Over Time

There is a dearth of research on the longitudinal course of visitations during incarceration. The most elucidative study on this topic was conducted by Cochran (2014; see also Cochran, 2012).

Using trajectory-modeling analyses, the author found that detained persons tend to experience one of four patterns of visitation: (1) no visits, (2) near-entry visitation, (3) near-release visitation, or (4) sustained visitation. These patterns were robust across persons serving varying lengths of time in prison. Furthermore, persons who were visited early and experienced a sustained pattern of visitation were less likely to recidivate (Cochran, 2014). Moreover, Turanovic and Tasca (2019) showed that detained persons had more negative experiences (getting in arguments, feeling stressed, guilty, or sad) with visitors who decreased the frequency of their visits over time.

Despite the potential benefits of visitation, research has shown that up to 74 % of detained persons do not receive a single visit in prison (Cochran, 2014). In fact, it is difficult to maintain regular visitations throughout a prison sentence since they are difficult to manage both emotionally and practically (De Claire & Dixon, 2017). For instance, prisons tend to be far from city centers and visitors must therefore travel a long distance to visit their intimates, investing a lot of time and resources (Duwe & Clark, 2013). Furthermore, the administrative policies of visits (e. g., body searches) and the settings where they take place can make them uncomfortable experiences for both visitors and detained persons (Duwe & Clark, 2013). Besides that, some detained persons discourage visits because they find it easier to do time without outside stressors (Pleggenkuhle, Huebner, & Summers, 2018).

Prior studies identified some factors positively associated with receiving prison visits. At the demographic level, these a younger age, female gender, being married, White race, a higher education level, and more pre-confinement support (Cochran et al., 2017; Connor & Tewksbury, 2015; Hickert, Palmen, Dirkzwager, & Nieuwbeerta, 2019; Jiang & Winfree Jr, 2006; Tasca, 2016; Tewksbury & Connor, 2012). In addition, several criminological factors have been associated with a lower level of visits, such as violent crimes, shorter sentence length, longer time served in prison, prior incarcerations, and prison misconduct (Cochran et al., 2017; Connor & Tewksbury, 2015; Tasca, 2016; Tewksbury & Connor, 2012). Regarding social factors, detained persons were more likely to receive prison visits if they were in a prison close to their home and when they came from areas with higher incarceration rates, social altruism, and more advantaged neighborhoods (Clark & Duwe, 2017; Cochran et al., 2017; Cochran, Mears, Bales, & Stewart, 2016; Jackson, Templer, Reimer, & LeBaron, 1997; Lindsey et al., 2017; Tasca, 2016).

1.2. Effect of Visitations

The maintenance of social bonds while in prison is often a major concern as the loss of contact with family and friends may create a profound sense of social isolation and strain (Adams, 1992). Such concerns are related to stress about losing close relationships and associated emotional support, as well as tangible resources necessary to cope with prison life (Lindsey et al., 2017; Liu, Pickett, & Baker, 2016; Mitchell, Spooner, Jia, & Zhang, 2016). In fact, detained persons who feel more isolated may experience greater difficulties adjusting to prison, including an elevated risk for mental illness, misconduct, violence, and self-injuries (Cochran et al., 2016). Theoretical explanations for the potential benefits of social support on mental health are, for example, that it may reduce the strains resulting from incarceration, may promote and preserve social capital (i. e., social networks and their resources), and may provide informal

social control (i. e., actions taken by citizens to regulate individual and group behavior; De Claire & Dixon, 2017; Mitchell et al., 2016; Pleggenkuhle et al., 2018).

Corroborating these assumptions, some empirical research has shown that the maintenance of interpersonal relationships in prison was indeed associated with positive effects among detained persons (De Claire & Dixon, 2017). Such positive outcomes include improved psychological well-being (Houck & Loper, 2002; Listwan, Colvin, Hanley, & Flannery, 2010; Monahan et al., 2011; Poehlmann, 2005; Stacer, 2012; Tuerk & Loper, 2006; Wooldredge, 1999), reduced prison misbehavior (Clark, 2001; Cochran, 2012; Gonçalves, Dirkzwager, Martins, Gonçalves, & Van der Laan, 2016; Jiang, Fisher-Giorlando, & Mo, 2005; Jiang & Winfree, 2006; Lindsey et al., 2017; Siennick et al., 2013), and successful reintegration into the community (e. g., job attainment, reduced recidivism) (Atkin-Plunk & Armstrong, 2018; Bales & Mears, 2008; Berg & Huebner, 2011; Casey-Acevedo & Bakken, 2002; Cochran, 2014; Duwe & Clark, 2013; Hickert et al., 2019; Liu et al., 2016; Mears, Cochran, Siennick, & Bales, 2012; Meyers et al., 2017; Mitchell et al., 2016). However, the results have been mixed (Day, Brauer, & Butler, 2015). While several studies have reported that social support mechanisms improve adjustment to prison, others found no significant effects (Clark, 2001; Coid et al., 2003; Lahm, 2008).

1.3. Visitation and Mental Health

Although visitations may help to foster prison adjustment and lessen the burden of the deprivations associated with prison life, they may also be a source of tension, thereby negatively affecting detained persons' well-being and behavior (Casey-Acevedo & Bakken, 2002; Meyers et al., 2017; Pleggenkuhle et al., 2018). For instance, after visits, detained persons may feel the lack of contact with their loved ones and the outside world, and may thus experience substantially heightened levels of stress and anxiety (Casey-Acevedo & Bakken, 2002; De Claire & Dixon, 2017; Liebling, 1999; Siennick et al., 2013). Furthermore, visitations are not always positive experiences but can be rather stressful as well (Tasca, 2016). In fact, prison visits may trigger adverse emotional responses in detained persons and visitors due to the separation at the end, prior stressors, relational conflicts, or even the punitive environment where they take place (Meyers et al., 2017; Turanovic & Tasca, 2019). Therefore, visitations may not always have a beneficial effect (Meyers et al., 2017; Pleggenkuhle et al., 2018; Tasca, 2016).

While prior studies discussed the potential negative impact of visitation assuming that prison visits may cause distress, no study empirically tested the reciprocal relationship between prison visits and mental health. It is, however, possible that, rather than visits causing distress, detained young adults with higher levels of distress may receive more visits, for instance, as a response from their family and friends to try to help them adjusting to prison life. Testing this hypothesis could help to enlighten the process by which visitations influence detained persons' well-being and to explain the inconsistent findings evidenced in the literature so far (Cochran & Mears, 2013; Siennick et al., 2013).

1.4. The Present Study

To fill these gaps in knowledge, the present study explored: (1) the longitudinal course of detained young adults' visitation rates during incarceration, (2) individual characteristics associated with receiving visits in prison, and (3) the reciprocal relationship between prison visits

and mental health. A better understanding of the relationship between prison visits and mental health may shed light on how to make visitations more effective experiences in promoting detained persons' well-being and behavior (Monahan et al., 2011).

2. Methods

2.1. Procedure

Data were collected in the only Portuguese prison that exclusively detains young adult male persons. The participants were assessed at three time points: during the first month ($N = 75$), third month ($N = 67$), and sixth month ($N = 60$) after admission to the institution. All detained persons who entered the facility between March 2011 and December 2011 were invited to participate. The first author informed newcomers (in their living unit) face-to-face about the study objectives, the confidentiality of the data, and that participation was voluntary. All approached detained persons initially agreed to participate.

In the first assessment, participants filled out the questionnaires in small groups (two to five) in a private room (generally the cafeteria of their unit) and participated in a short individual interview aiming to collect socio-demographic data. In case participants indicated reading difficulties (e. g., foreigners or illiterates), the first author read the questions to them and recorded the answers on the self-report forms. Detained persons who did not understand Portuguese were excluded (approximately 6 %, mostly Romanians). Only the detained persons and the researcher were present during the assessment protocol. In the following two assessments, participants could fill out the questionnaires in their individual cells and return them in a sealed envelope. Besides the information gathered from self-reports, information on prison visits and criminological data were collected from official prison records. Fifteen participants dropped out of the study before the end of their first six months in the current prison because they had been released or transferred to another facility. The potential effect of selection bias was explored, but participants and drop-out did not sign differ with respect to the covariates included in this study.¹

Approval to carry out this research was obtained from the Portuguese General Directorate of Reintegration and Prisons, Ministry of Justice. All detained persons signed an informed consent form prior to their participation in the study. Under permission granted from the Ministry of Justice, the authors are not allowed to share the dataset in order to preserve the confidentiality of the data and the persons who participated in this study.

2.2. Sample

This study includes 75 young adult males with a mean age of 19 years ($SD = 1.40$, range 17 to 22 years) at the time of their entry in the institution. On average, the sample had completed

¹ Specifically, we developed a probit selection model predicting attrition through the independent variables of this study. This model was not statistically significant as a whole, neither was any predictor.

seven years of education ($SD = 2.35$, range 0 to 12). The majority were single (84 %, $N = 63$),² Portuguese (59 %, $N = 44$), White (55 %, $N = 41$), and accused of a property crime (71 %, $N = 53$). Their time spent in prison before entering the institution (for the present and/or past prison sentences) spanned an average of seven months ($SD = 9.31$, range 0-42). Nine participants (12 %) had served a prison sentence before. Additional characteristics of the sample are presented in *Table 1*.

Table 1: Descriptive Characteristics of the Sample

Variable	Month 1	Month 3	Month 6
	$N = 75$ $M / \hat{p} (SD / n)$	$N = 67$ $M / \hat{p} (SD / n)$	$N = 60$ $M / \hat{p} (SD / n)$
Age	19.15 (1.40)	19.33 (1.44)	19.58 (1.37)
Single	.84 (63)	.82 (55)	.87 (52)
Education (years)	6.85 (2.35)	6.81 (2.39)	6.77 (2.26)
Portuguese	.59 (44)	.61 (41)	.58 (35)
White	.55 (41)	.55 (37)	.52 (31)
Drug use	.80 (60)	.82 (55)	.85 (51)
Mental treatment history	.37 (28)	.36 (24)	.37 (22)
Criminal history	2.72 (1.89)	2.82 (1.94)	3.02 (1.90)
Sentenced	.40 (30)	.46 (31)	.57 (34)
Crime: property	.71 (53)	.67 (45)	.68 (41)
Crime: violent	.16 (12)	.18 (12)	.18 (11)
Crime: drug	.13 (10)	.15 (10)	.13 (8)
Age at 1st prison	18.43 (1.48)	18.39 (1.49)	18.27 (1.45)
Prior time served (months)	7.45 (9.31)	8.19 (9.56)	8.97 (9.81)
Visits (monthly mean)	5.32 (6.66)	3.50 (4.31)	2.09 (2.66)
Mental Health Symptoms	1.04 (0.63)	1.03 (0.65)	0.93 (0.65)

Note. M = mean, p = sample proportion, SD = standard deviation, n = number of participants, N = total sample size.

2.3. Variables

2.3.1. Mental health symptoms.

Mental health symptoms were assessed with the Portuguese version of the Brief Symptom Inventory (BSI; Derogatis, 1993; Canavarro, 1999). The BSI includes 53 symptoms for which participants rate the extent to which they had experienced these symptoms in the past week. The items are rated on a five point Likert scale (0 = not at all, 4 = extremely) where higher scores indicate higher symptomatology. The total score indicating the overall level of psychological distress (i. e., Global Severity Index) was used in the current study. The reliability of the scale was excellent ($\alpha = .96$). The variable was transformed with a square root transformation to approximate a normal distribution.

² Compared to single individuals, persons who were married/living together tended to have a less developed criminal history ($p = .009$) and to be more frequently sentenced ($p = .039$). There was no other significant differences between groups on the study variables.

2.3.2. Prison visits.

Prison visits represent the number of visits that the detained persons received during each observation period (i. e., one month for wave 1, two months for wave 2, and three months for wave 3) from their family and friends. Visits received from lawyers or volunteer groups like the Samaritans are not included in the measure. In this study, prison visits aggregate both the number of visits and visitors. When in the regular prison regime, the detained persons can receive visits two times per week in sessions of one hour with a maximum of three visitors. Therefore, for example, if a detained persons was visited by the father and the mother on the same day, we counted two visits. Visits are revoked when detained persons are serving an isolation sanctions due to a severe disciplinary infraction (during the study period, 19 out of the 75 participants [25.3 %] committed a severe infraction).

2.3.3. Covariates.

The covariates of this study included age (in years), nationality (0 = foreigner, 1 = Portuguese), marital status (0 = married/living together [as an indication of a stable relationship], 1 = single), education (in years), race (0 = Black, 1 = White), drug use (in the present or past; 0 = no, 1 = yes), mental health treatment history (0 = no, 1 = yes), criminal history (measured with the Criminal History subscale of the Level of Service Inventory-Revised [$\alpha = .71$]; Andrews & Bonta, 1995), being sentenced (0 = no, 1 = yes), offense type (property, violent, drug related), age at first imprisonment (in years), and time previously served in prison (in months).

2.3.4. Analyses

We conducted a power analysis to compute the required sample size. In a multiple linear regression with two predictors, to detect a medium effect size, with an error probability of .05 and power of 80 %, 68 participants were required.

In order to account for the hierarchical structure of the data (measurements nested within detained persons), a random effect regression analysis was performed to examine changes in detained persons' visitation rates during incarceration (aim 1; Rabe-Hesketh & Skrondal, 2008). A negative binomial regression was utilized to take into account the skewness of the outcome variable (over dispersed count variable; Hilbe, 2011). As the waves were not equally spaced (and the opportunity to receive visits is higher in longer periods), an exposure variable was included in the fixed part of the models, with coefficient constrained to 1, thus controlling for different waves' length. When the omnibus Wald test revealed significant mean differences, orthogonal contrasts with Bonferroni's correction were calculated to test mean differences between specific waves.

Individual characteristics associated with receiving visits (aim 2) were identified through negative binomial regressions, by regressing prison visits at month 3 and at month 6 on the covariates of the study, while controlling for time in prison. Variables that were found to be associated with prison visits at month 3 and month 6 in bivariate analyses were then entered together in a multivariable model. In the final multivariable models predicting visits at month

3 and month 6, only variables significant at the 5 % level were retained. These variables were utilized as control variables in the following analyses.

A path analysis framework was utilized to investigate the reciprocal relationship between prison visits and subsequent mental health symptoms (aim 3). Specifically, visits at month 1 and month 3 were utilized to predict mental health symptoms at month 3 and months 6, respectively, while controlling for the level of mental health symptoms at the prior assessment (i. e., at month 1 and month 3, respectively). The same procedure was employed to test the effect of mental health symptoms on following prison visits. In a subsequent model, we tested this reciprocal relationship controlling for covariates of prison visits (those identified in aim 2). Negative binomial regressions were performed to predict prison visits (count variable), while linear regressions were employed to predict mental health symptoms (continuous variable). Missing data on the BSI (4 %) were imputed manually based on predicted probabilities from regression models.³ Questionnaires with 25 % or more missing data were considered invalid. Robust standard errors were calculated in all regression analyses to deal with minor concerns about failure to meet assumptions, including normality, heteroscedasticity, and observations that exhibit large residuals, leverage or influence. The analyses were conducted using Stata 14.1.

3. Results

3.1. Prison Visits Over Time

The number of visits received by the detained young adults declined over their first six months in the institution (see *Table 1*). On average, the detained persons received 5.32 visits ($SD = 6.66$, range 0–30) during the first month in prison, and a mean of 3.50 visits in the second and third month ($SD = 4.31$, range 0–21), and a mean of 2.09 visits in the fourth, fifth and sixth month ($SD = 2.66$, range 0–15). As a whole, this decrease in prison visits over time was statistically significant (Wald $\chi^2 [2] = 47.01$, $p < .001$). Furthermore, the number of prison visits at month 1 was higher than at month 3 ($p < .001$), and the number of prison visits at month 3 was higher than at month 6 ($p = .011$). Of the 60 participants who were still in prison 6 months after entry, only 3 (5 %) did not receive any visit.

³ We developed an ordered logit regression model for each missing item, using it as an outcome and other items of the BSI as predictor variables (those more correlated with the missing item). After estimating the best model to the data, marginal effects were calculated, predicting participant's score on the missing item through its score on the items found to be significant predictors. The response category (ranging from 0 to 4) with higher predicted probability was then assigned to fill the missing value. Compared with chained imputation, this method produces a specific model for each item and each individual person

3.2. Covariates of Prison Visits

Table 2 presents the covariates of prison visits during the first six months of incarceration in the current prison. The bivariate analyses show that a higher number of prison visits was significantly associated with having a partner, being Portuguese, being White, being on remand, having a mental treatment history, and a less elaborate criminal history.

In the multivariable analyses, detained persons who were Portuguese ($p = .001$), and who had a lower educational level ($p = .023$) and a less elaborate criminal history ($p < .001$) reported more visits at month 3. Furthermore, detained persons with a lower educational level ($p = .033$), a mental treatment history ($p < .001$) and a less elaborate criminal history ($p = .005$) reported more prison visits at month 6. These four covariates (i. e., education, nationality, mental treatment history, and criminal history) were, therefore, utilized as control variables in the following analyses.

Table 2: Covariates of Prison Visits over Time

Covariate	Month 3	Month 6
	$N = 67$ $b (SE)$	$N = 60$ $b (SE)$
Bivariate analyses		
Age	-0.02 (0.09)	-0.10 (0.09)
Single	-0.97 (0.31)**	-0.87 (0.45)
Educational level	-0.10 (0.06)	-0.08 (0.07)
Portuguese	1.11 (0.24)***	0.63 (0.28)*
White	0.91 (0.25)***	0.39 (0.30)
Drug use	0.14 (0.31)	0.05 (0.31)
Mental treatment history	0.54 (0.29)	0.83 (0.31)**
Criminal history	-0.27 (0.07)***	-0.15 (0.09)
Sentenced	-0.72 (0.29)*	-0.55 (0.30)
Crime: property	-0.26 (0.32)	-0.20 (0.37)
Crime: violent	0.04 (0.36)	-0.17 (0.37)
Crime: drug	0.37 (0.44)	0.50 (0.55)
Age at 1st prison	0.15 (0.08)	0.02 (0.11)
Prior time served	-0.03 (0.02)	-0.02 (0.02)
Multivariable analyses		
Education	-0.09 (0.04)*	-0.13 (0.06)*
Portuguese	0.90 (0.27)**	–
Mental treatment history	–	1.01 (0.28)***
Criminal history	-0.29 (0.07)***	-0.23 (0.08)**

Note. b = unstandardized regression coefficient (exponentiated b represents the incidence rate ratio [IRR]), SE = robust standard error.

* $p < .05$, ** $p < .01$, *** $p < .001$, two tailed.

3.3. Prison Visits and Mental Health

Table 3 presents the results of the path analysis model investigating the reciprocal relationship between prison visits and mental health symptoms over time in prison. Model 1 (without control variables) indicated that prison visits at month 1 were not associated with mental health symptoms at month 3 when controlling for level of mental health symptoms at month 1. In contrast, mental health symptoms at month 1 were significantly associated with a higher number of prison visits at month 3 ($p = .039$) when controlling for the number of prison visits at month 1. For each one point increase in the BSI score at month 1, the young adults' visits at month 3 would be expected to increase by 82 % (exp. $B [0.60] = 1.82$). However, mental health symptoms at month 3 were not significantly associated with prison visits at month 6. In Model 2 (with control variables), there was a tendency for mental health symptoms at month 1 to be related to prison visits at month 3 but the result did not reach statistical significance ($p = .087$). The effect of prison visits on mental health symptoms was about null at both month 3 and month 6, controlling for covariates or not.

Table 3: Reciprocal Relationship between Prison Visits and Mental Health Symptoms

Variable	Visits M3 <i>b</i> (SE)	MHS M3 <i>b</i> (SE)	Visits M6 <i>b</i> (SE)	MHS M6 <i>b</i> (SE)
Model 1				
Visits M1	0.13 (0.02)***	-0.00 (0.00)	–	–
MHS M1	0.60 (0.27)*	0.91 (0.09)***	–	–
Visits M3	–	–	0.10 (0.02)***	0.00 (0.00)
MHS M3	–	–	-0.11 (0.31)	0.92 (0.10)***
Model 2				
Education	0.01 (0.05)	0.01 (0.01)	-0.03 (0.06)	-0.02 (0.01)*
Portuguese	0.15 (0.24)	0.02 (0.06)	-0.19 (0.33)	-0.08 (0.05)
Mental treatment	0.17 (0.20)	0.03 (0.06)	0.53 (0.31)†	0.12 (0.05)*
Criminal history	-0.07 (0.06)	0.01 (0.02)	-0.04 (0.10)	0.02 (0.01)
Visits M1	0.11 (0.02)***	-0.00 (0.01)	–	–
MHS M1	0.49 (0.29)	0.89 (0.11)***	–	–
Visits M3	–	–	0.09 (0.03)***	0.00 (0.00)
MHS M3	–	–	-0.24 (0.31)	0.83 (0.09)***

Note. b = unstandardized regression coefficient (exponentiated b represents the incidence rate ratio [IRR]), SE = robust standard error; MHS = mental health symptoms; M1 = month 1, M3 = month 3, M6 = month 6; $N = 67$.

* $p < .05$, *** $p < .001$, two tailed.

4. Discussion

Knowledge on the effect of visits from family and friends on detained persons' well-being is important for the development of prison policy. However, visitation in prison remains an under-researched aspect of prison life, especially among younger persons (De Claire & Dixon, 2017; Hutton, 2016; Monahan et al., 2011). Based on a sample of young adult males detained in Portugal, the present study explored the longitudinal course of their visitation rates during incarceration, individual characteristics associated with receiving visits in prison, and the reciprocal relationship between prison visits and mental health symptoms. Regression analyses

revealed that prison visits tended to decrease over time in prison, that prison visits were associated with different individual characteristics, and that higher levels of mental health symptoms at entry in prison tended to result in more subsequent prison visits in the first three months of incarceration.

4.1. Prison Visits over Time

Visits progressively declined during the first six months in the institution. This decline may be related to diverse factors. For instance, family and friends may more frequently visit their intimates in the beginning of the prison sentence to help them facing the initial shock of incarceration (Adams, 1992) and also to bring them material stuff that they are in need of, like clothes, food, and audiovisuals. It may be difficult, however, to maintain visits throughout the prison sentence (De Claire & Dixon, 2017). For example, visitations require a considerable amount of time and (financial) resources, which many families and friends of detained persons may not have, and visitation hours are usually during the daytime and may conflict with other responsibilities of the visitors (e. g. employment, child care). In addition, visits are frequently stressful for the visitors as visitation policies are subordinate to rigorous security procedures. Finally, visitation rates may decline over time due to the effects of stigmatization and labeling that occurs for having relatives in prison (Mears et al., 2012).

It is possible that the pattern of visitations vary across different detained persons (see Cochran, 2012; Cochran, 2014). Unfortunately, due to the small size of our sample and the few assessment periods, it was not possible to conduct a group based trajectory analysis. However, the number of visitations in the different periods was strongly correlated ($r_s = .78, .75, \text{ and } .71$ for the correlation between visits at Month 1 and Month 3, Month 3 and Month 6, and Month 1 and Month 6, respectively), suggesting that persons with fewer visits upon entry in prison tend to be those with less social support during the entire prison term.

In accordance with a recent study conducted among adult males in the Netherlands (Hickert et al., 2019), we observed that nearly all participants in this study (95 %) received a visit during their first six months in the institution. This stands in contrast to the findings among adult detained persons in the United States, where the rate of unvisited detained persons varied between 40 % (Duwe & Clark, 2013) and 74 % (Cochran, 2014). This may reflect differences across the prison systems and cultures in Europe and the United States. For example, compared to prisons in the United States, prisons in Europe are more focused on resocialization and rehabilitation, which may positively affect the chance of receiving visits (Subramanian & Shames, 2013). Besides that, there may be differences among young and adult prison populations. As young people are generally more dependent of their support networks, they may receive more visits in prison than adults do. In fact, in the longitudinal study of Monahan et al. (2011) among male adolescents in the United States, only 12 % did not receive a parental visit in the first two months of incarceration, a rate that is more comparable to the results of the present study.

4.2. Covariates of Prison Visits

Several characteristics of the detained young adults were related to their frequency of receiving visits in prison. Attending to the variables included in our study, detained young adults tended to receive more visits if they had a lower educational level, were Portuguese, had a mental treatment history, and had a less elaborate criminal history. Some of these findings agree with prior research among adults, while others are in the opposite direction, which might again indicate differences between young adults and adults, as well as across cultures.

For instance, in the present study, a higher educational level was related to a lower number of visits from family and friends, contrary to prior research who found that adult detained persons in the United States with a higher level of education were more likely to receive visits from family and friends (Connor & Tewksbury, 2015). It has been argued that more educated detained persons may be more likely to have loved ones with sufficient resources to visit (Connor & Tewksbury, 2015). However, it can also be that family and friends of detained persons with a higher educational level may in general be more reflective of mainstream and conventional cultural values and lifestyles, and as a consequence may feel less comfortable within the prison environment (Tewksbury & Connor, 2012).

Having a history of mental treatment was associated with more prison visits. This seems contrary to prior research with adults in the United States, which showed that individuals with a history of mental health problems had lower odds of visitations in prison (Stacer, 2012). It has been suggested that people may fear and avoid persons with mental illness, which can lead to fewer visits (Stacer, 2012). However, younger adult detained persons more frequently have support from family, peers, and the community (Lindsey et al., 2017). It may be that family and friends of these youths with a history of mental health problems may be more worried about their difficulties in coping with the new prison environment, and therefore visit them more often.

More in line with prior research, the LSI-R criminal history scale was negatively related to prison visits. Similarly, prior research among adults showed that individuals with more extensive prior records, violent crimes, and misbehavior in prison tend to experience less visitation (Cochran et al., 2017; Connor & Tewksbury, 2015; Tewksbury & Connor, 2012). This suggests that being more deeply ingrained in a criminal lifestyle may weaken relationships with one's family and friends, leading to less visitation over time (Connor & Tewksbury, 2015; Tewksbury & Connor, 2012).

In addition, Portuguese nationality was related to more visits. This finding may partially be explained by the racial background of the detained persons. Most Portuguese participants were White (33 out of 44) and may therefore come from families and communities with more resources for visitation when compared to Black persons (Tewksbury & Connor, 2012). As Cochran et al. (2017) explained, minority groups may experience less visitation because their social ties have fewer social and economic resources. Furthermore, foreigners may be less likely to have family and friends in the country, particularly those convicted for international drug smuggling, which naturally results in less visits.

4.3. Prison Visits and Mental Health

Finally, the results of this study indicate that a higher level of mental health symptoms at entry in prison resulted in more visitations until the third month of incarceration. Contrary, prison visits did not affect subsequent mental health symptoms, which is contradictory to prior findings described in the criminological literature (Casey-Acevedo & Bakken, 2002; Liebling, 1999; Pleggenkuhle et al., 2018; Turanovic & Tasca, 2019). Our finding, therefore, suggests that, at least among young adults, having mental health symptoms may be a factor that contributes to more frequent visits from family and friends in the beginning of the prison sentence.

A potential explanation for this findings is that detained young adults with higher levels of distress may receive more visits as a social support mechanism provided by their family and friends who try to help them to adjust to prison life in the initial stage of confinement, when the pains of imprisonment are most intense (Sykes, 1958). This fits within the Social Support paradigm (Cullen, 1994) as support providers may try to minimize the effects of prison strains on their intimates by providing them expressive and instrumental support through visitation (Hickert et al., 2019). This is also in line with the Attachment Theory (Bowlby, 1988) which proposes that humans tend to care for, nurture, and protect others, especially during times of need (Inagaki & Orehek, 2017). That is, independently of the quality of support provided, the loved ones of detained young adults may feel the urge to visit them because these youngsters may be more dependent of their support and more vulnerable to the stressors of the prison environment (Cochran et al., 2017).

In sum, although social support generally has a positive effect on mental health among detained persons (De Claire & Dixon, 2017), prison visits may also be associated with distress (Casey-Acevedo & Bakken, 2002; Liebling, 1999; Pleggenkuhle et al., 2018; Poehlmann, 2005; Turanovic & Tasca, 2019). However, the frequency of visits may not always be the cause of distress itself, but rather a social support response from family and friends of young prisoners with more psychological problems, in the initial period of confinement.

4.4. Limitations and Implications

This study has several limitations. First, it includes only male detained persons from one Portuguese prison and therefore it is uncertain to what extent the results can be generalized to the female population and detained persons in other institutions and countries. Second, we focused on visitation as a proxy for social support but the results could vary if we had included other forms of support, like mails and phone calls (Jiang & Winfree, 2006). Furthermore, as visits can be revoked when detained persons are serving an isolation sanction, this can have affected the number of visitations. Third, some predictors of prison visits, like the distance between support providers' residence and the prison, were not included in this study. As such, the list of covariates here exposed is not exhaustive. Fourth, we had no information about the visitation experience or the quality of the relationship between visitors and detained persons. However, visitations may have a different effect according to the type of visitor (Atkin-Plunk & Armstrong, 2018; Connor & Tewksbury, 2015; Duwe & Clark, 2013; Hickert et al., 2019; Liu & Chui, 2014; Meyers et al., 2017; Siennick et al., 2013; Turanovic & Tasca, 2019). Finally, it must be noted that the sample of this study was relatively small, especially at wave 3, which may have affected the findings.

Despite these limitations, this study increases current knowledge on the longitudinal course of visits over time in prison and predictors of visits among detained young adults in Europe, a topic that has been understudied so far despite its importance for correctional practice. Furthermore, the findings shed light on the reciprocal relationship between visitation and detained young adults' mental health and suggest that mental health problems may result in more visitations, and not the other way around. Overall, the results help to further understand how the effect of social support operates among detained young adults, thereby expanding the Social Support theory. However, knowledge on young adults is still limited and further research is much needed to understand how social support may help to improve the mental health and adjustment to prison life among this distinct population.

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