

A Survival Analysis of Timing of Entry into Prostitution: The Differential Impact of Race, Educational Level, and Childhood/Adolescent Risk Factors*

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Using survey data obtained from 309 women working in street-level prostitution in Phoenix, Arizona, this investigation examines the influence of minority status, educational level, and the experience of risk factors in an individual's childhood or adolescence on the hazard rate for age of entry into prostitution. Findings of this study show that women engaging in prostitution have limited educational backgrounds and often do not complete high school. Results indicate that both white and minority women engaging in prostitution experienced high rates of physical and sexual abuse in childhood, as well as parental substance abuse. When compared to minority women, white women are more likely to have experienced any one of these three risk factors thought to influence entry into prostitution, yet event-history analysis indicates that minority women consistently experience significantly higher hazard rates for entry into prostitution. Findings suggest the need for future research to better assess the impact of race—in the form of socioeconomic and social disadvantages associated with minority status—as it relates to entry into the sex trade.

Introduction

Previous research has had limited success in delineating the relationships between various risk factors that appear to influence women's entry into prostitution. In addition to the problem of overcoming barriers to obtaining "meaningful information from representative samples of prostitutes" (Potterat et al. 1998, p. 333), a myriad of other methodological issues arise. Risk factors most commonly associated with entry into prostitution—childhood abuse, runaway behavior, homelessness, and drug addiction—are highly correlated with one another, and it is difficult to sort out their respective influences on the individual (Seng 1989; Tyler, Hoyt, and Whitbeck 2000). Further, the question of causality is complex. Just as childhood abuse and drug use, for example, can increase the likelihood of entering prostitution, entry into prostitution can occur first and can increase the likelihood of experiencing various forms of physical and sexual violence. Likewise, prostitution can facilitate initial substance abuse or exacerbate existing drug use (Goldstein 1979; Anglin and Hser 1987; Kramer, Brenchley, and Mitchell 1999).

Women who have suffered multiple abuses within the home and elsewhere often commit and are incarcerated for the commission of survival crimes such as prostitution (Miller 1986; Daly 1992, 1994; Hood-Brown 1998; Owen 1998;

Browne, Miller, and Maguin 1999). The failures of specific social institutions, such as the family and the educational system, are implicated in the decision to enter prostitution, as women who are dislocated from their families and from the schools—especially women of color—are often consigned to lives of limited opportunity typified by desperate struggles for economic survival (Miller 1986; Daly 1992, 1994; Richie 1996; Owen 1998).

Childhood Sexual and Physical Abuse

Childhood sexual abuse is associated with greater vulnerability to revictimization in adulthood, including involvement in sex work (Russell 1986; Widom 1995; Messman and Long 1996; Widom and Kuhns 1996). It has been well documented that women in prostitution have high rates of sexual abuse (Silbert and Pines 1981; Bourgois and Dunlap 1993; Ratner 1993; Messman-Moore and Long 2000). Sexual abuse in childhood can alter an individual's orientation to the world and can distort their self-concept and emotional capacities (Finkelhor and Browne 1988). Sexual abuse has been shown to result in poor self-esteem, anxiety, depression, substance abuse, runaway behavior, difficulty in interpersonal relationships, and a wide array of other emotional and physical problems (Silbert and Pines 1981; Browne and Finkelhor 1986; Briere and Runtz 1988; Finkelhor and Browne 1988; Widom 1995; Epstein et al. 1998; Browne, Miller, and Maguin 1999; Messman-Moore and Long 2000; Tyler, Hoyt, and Whitbeck 2000; West and Williams 2000). Sexual-abuse victims can develop misconceptions about sex, and often display sexual knowledge and behaviors inappropriate for their age (Browne and Finkelhor 1986). Relevant to this investigation, victims of sexual abuse have been shown to be particularly vulnerable to becoming involved in abusive and sexually exploitative relationships as adults (Briere and Runtz 1988; Finkelhor and Browne 1988; Richie 1996; Messman-Moore and Long 2000; Tyler, Hoyt, and Whitbeck 2000; West and Williams 2000).

In a sample of 40 adolescent runaways and 95 homeless women, Ronald Simons and Les Whitbeck (1991) examined sexual abuse as a precursor to prostitution while controlling for variables such as parental physical abuse, substance abuse, and participation in deviant activities other than prostitution. Physical abuse was included in an effort to assess whether it is sexual abuse specifically or destructive parenting in general that is important in the etiology of prostitution. Their analyses revealed that for runaways, sexual abuse had a significant impact on the probability of entry into prostitution. Each unit increase on a sexual-abuse scale multiplied the odds of engaging in prostitution by 1.23. Simons and Whitbeck's findings are in alignment with other research suggesting that the link between previous victimization and prostitution is not direct, but rather occurs indirectly through involvement in a more dangerous lifestyle and riskier activities (Browne and Finkelhor 1986).

Kimberly Tyler, Dan Hoyt, and Les Whitbeck (2000) also investigated the effects of sexual abuse on subsequent sexual victimization among female homeless and runaway adolescents. Results from their analyses suggest that sexual abuse in the home has a direct positive effect on sexual victimization of adolescents on the streets. While they distinguished between sex trading and sexual victimization (positively correlated), their findings suggest an increased probability of both experiences following the development of emotional and psychological problems associated with abuse, dysfunctional family dynamics, and immersion in street culture.

In a comparison of 237 female prostitutes and 407 women not involved in prostitution, John Potterat and colleagues (1998) examined sexual- and drug-abuse milestones in an effort to delineate pathways to prostitution. Their study showed a smaller percentage of prostitutes to have experienced sexual abuse than other studies had shown (32 percent), but this was very likely due to the fact that “nonconsensual, prepubertal sex” was defined as “penile penetration prior to age 11.” (p. 335) The percentage of prostitutes reporting early non-consensual sex was still relatively high when compared to the percentage of women not involved in prostitution (13 percent). Findings from Potterat and colleagues’ study support research that questions the role of sexual abuse as a direct causal variable in entering the sex trade.

In a recent investigation, Catalina Arata (2000) tested a model for predicting adult/adolescent sexual revictimization and postassault functioning for women with histories of child sexual abuse ($n = 221$). Participants completed questionnaires regarding their sexual-victimization history, postsexual-assault symptoms and attributions, and consensual sexual behavior. Repeat victimization was defined as having experienced child sexual abuse with a separate incident of adolescent or adult victimization. Repeat victimization was positively associated with having experienced child sexual abuse. Women with repeated victimization also reported more high-risk sexual behavior.

Adult women in prostitution often report a history of childhood physical abuse as well as sexual abuse, especially at the hands of substance-abusing caregivers. In recent studies, 60–70 percent of prostitutes report being physically abused as children (Bagley and Young 1987; Kramer, Brenchley, and Mitchell 1999). While physical abuse is perhaps less frequently viewed as a precursor to entry into prostitution, long-term outcomes of physical abuse are not entirely distinct from those of sexual abuse. Similar to findings concerning sexual abuse in childhood and subsequent substance abuse, research supports that emotional problems stemming from the trauma of physical abuse in childhood can result in dependence on drugs and alcohol (Kunitz et al. 1998). In both physical and sexual abuse, the victim’s body space is invaded against her wishes, often repeatedly and over an extended period of time. Additionally, physical abusers, as with

sexual offenders, are often people upon whom the victim relies for care. Outcomes of physical abuse include fear, anxiety, depression, self-destructive behavior, anger, aggression, guilt and shame, an impaired ability to trust, an increased likelihood of revictimization in adulthood, sexually inappropriate behavior, school problems, truancy, running away, and delinquency (Browne and Finkelhor 1986; Bayatpour, Wells, and Holford 1992; Browne, Miller, and Maguin 1999).

In a recent investigation seeking to explore the extent to which child abuse is related to the persistence of risky behavior (Goodman and Falloot 1998), data were collected from 99 women with diagnoses of serious mental illnesses. Data pertaining to childhood sexual abuse, adult victimization, substance abuse, and risky sexual behavior were examined. Results indicated that childhood sexual abuse is related to adult sexual and physical assault, alcohol and cocaine abuse, and prostitution, but childhood physical abuse was determined to be related only to adult physical assault and alcohol abuse.

Substance Abuse by Caregivers

Children with drug-addicted parents are at extremely high risk for maltreatment. Short-term effects of parental substance abuse for children include physical health problems, hyperactivity, conduct disorders, low academic performance, learning disorders, guilt, shame, embarrassment, aggression, inability to trust others, and low self-esteem (*Virginia Child Protection Newsletter* 1998). It has been documented that children of substance-abusing parents are more likely to witness domestic violence and to be victims of physical or sexual abuse (Black, Bucky, and Wilder-Padilla 1986). While it has been well established that the family backgrounds of prostitutes are often chaotic and dysfunctional, little research has focused specifically upon destructive parenting in the form of parental substance abuse, although one study found that 35–58 percent of prostitutes had caregivers who abused alcohol (Bagley and Young 1987). Recent work by Lisa Kramer (forthcoming) shows similar findings. Of the 87 prostitutes (streetwalkers and escorts) Kramer surveyed, 67 percent grew up in homes in which one or more parents were abusing drugs and/or alcohol. In addition, for these 58 households, survey respondents reported having been given illegal drugs 5 percent of the time, being given alcohol 23 percent of the time, and being given both substances 16 percent of the time prior to age 11 by a primary caregiver. While research has not specifically focused upon parental substance abuse as a precursor to entry into prostitution, given the substantive body of literature that supports dysfunctional and abusive caregivers as increasing women's risk, this appears to be a legitimate variable for further exploration.

Minority Status

Race and class oppression and the attendant poverty and homelessness increase the likelihood of minority women adopting survival strategies that

involve deviant and criminal behavior (Rosenbaum 1981; Miller 1986; Arnold 1994; Daly 1994; Maher 1997). Despite the fact that minority women have been shown to suffer substantial social, educational, and economic disadvantages (e.g., Rosenbaum 1981; Higginbotham 1983; Jones 1985; Amot and Mathaei 1991; Friedman and Alicea 1995; Richie 1996; Maher 1997; Owen 1998; Razack 1998; Collins 2000), studies that consider the effects of race in combination with social factors such as sexual and physical abuse are conducted relatively infrequently. Many studies have focused on the intersection of social variables such as class and gender or race and gender, but few have considered all three in conjunction. Other variables are often submerged when ethnicity or culture is examined, and very little research has explored the relationship between race and entry into prostitution specifically.

Potterat and colleagues (1998) are among the few to have substantiated racial differences among sex workers. They found that nonstreet prostitutes were more likely to be white (92 percent) than were street prostitutes (59 percent). Nonminority prostitutes were more likely than either black or Hispanic prostitutes to report IV drug use and to have experienced nonconsensual prepubertal sex. Other racial differences include significant differences between age distribution at first penile penetration, regular sexual activity, first drug use, and regular drug use. The three groups that were examined also differed significantly in the distribution of age differences between the time of first and regular prostitution ($p < 0.01$). Potterat and colleagues' findings suggest that there are racial differences in the timing but not the order of the events leading to entry into prostitution. Rebecca Katz (2000, p. 635) emphasizes the importance of examining women's developmental pathways to crime in ways that include an analysis of "the context of females' lives as they differ by race and class membership, adult and child maltreatment experiences."

Data and Methods

Because nonactivist prostitutes are reluctant to share information about their experiences, for legal and other compelling reasons, obtaining data from sex workers is challenging. Caution must be exercised in interpreting findings generated from any sample of subjects whose inclusion in a study is related to the ability of the researcher to gain access to them, and research with those engaging in prostitution poses no exception. As is usually the case with prostitution research, the women completing surveys for this study are, to some extent, included because they were more accessible than other women engaging in prostitution. Importantly, because street-level prostitutes are far more visible than other types of sex workers, they are arrested much more often. Thus, it is likely that the substantial majority of respondents included in this study were individuals working at the lower echelons of the prostitution hierarchy (at the street level), rather than in escort services, resorts, and/or massage parlors.

Respondents were contacted at two separate sites, resulting in a 95-percent response rate and 394 completed surveys. One group consisted of 298 women incarcerated for minor offenses (including drug offenses and solicitation of prostitution) who were participating in a voluntary program for prostitutes at the jail at the time they completed the surveys. The number of times the participants attended the weekly prostitution program ranged from 1 to 17 times; according to records maintained by the program administrator, the average number of attendances was seven. The group meetings were fairly informal, facilitated discussion groups, and no therapist was present. The women were at various stages of the judicial process; some were awaiting sentencing, others had been convicted and were serving their sentences. Surveys were administered over an 18-month time frame beginning in 1997. The remaining 96 surveys were completed by women outside of prison who attended meetings or who received services from a community-based, nonresidential rehabilitation program. Due to missing data for some of the variables, the final effective sample size used in the analysis was 309 cases.

The women completed the surveys for this study independently, but a program aide assisted them in reading and interpreting survey items as needed. Surveys took respondents approximately 40 minutes to complete. Participants were asked to avoid writing their names or other identifying information (such as their Social Security numbers) on the questionnaires, to ensure their confidentiality. Survey items asked women to indicate their racial background (whether they were white, black, Hispanic, Asian, Native American, mixed, or other), the highest grade of school they completed, and their age of entry into prostitution. To ensure adequate numbers within racial categories, race was recoded into a dummy variable. Respondents who indicated that they were black, Hispanic, Asian, Native American, mixed, or other were classified as "minority." Also, while most items on the two sets of surveys were identical, 67 surveys had closed-ended categories for age of entry into prostitution, covering a three-year range (e.g., 11–13, 14–16, 17–19 . . . 41 and over). For these cases, age of entry was converted to the midpoint of the range. The two respondents who indicated they were "41 and over" when they entered prostitution were counted as missing data.

The time of entering prostitution was defined as the time at which the women began performing sexual acts in exchange for drugs, alcohol, money, and/or housing or were forced or coerced to perform these acts for similar rewards. Several women expressed, for example, that they had been forced to perform sex acts at a very early age by stepfathers, uncles, or fathers for the men's friends or for other individuals in exchange for money or drugs. For the women who were prostituted at a very early age, the distinction made at time of survey was whether rewards were offered as payment for sexual acts, either to the subject or to the

subject's caregiver(s). Survey items also asked the women to indicate if they had been a victim of sexual or physical abuse by a family member while growing up (response options included fathers, mothers, brothers, sisters, grandfathers, grandmothers, uncles, aunts, and similar others) and whether one or more of their parents abused drugs or alcohol. Physical abuse was described as the infliction of physical injury as a result of punching, beating, kicking, biting, burning, shaking, or a similar type of assault, and sexual abuse was described as being fondled, being forced or coerced into intercourse and/or sodomized, exposure to exhibitionism, and other similar types of assaults involving the abuser him- or herself. The women's responses reflected their perceptions of whether they were abused and/or prostituted, an important consideration in assessing the significance of these data. One woman, for example, saw herself as the victim of sexual abuse by her stepfather and also as having been prostituted by him, as he sold her to other men in exchange for drugs.

Cox Regression Analysis

Because there are several methods of survival analysis, selecting the appropriate method can be difficult (Allison 1995). As the dependent variable in this study was age of entry into prostitution, it was determined that estimating proportional hazard models using Cox regression was the most suitable approach. Cox regression is especially useful when examining the relative timing of an event, and with Cox regression, the influence of the independent variables on the hazard rate for age of entry into prostitution could be estimated (Allison 1995). Paul Allison (1995, p. 18) describes a hazard rate as a characteristic of individuals, not of populations or samples; it is "helpful to imagine that each of us carries around hazards for different kinds of events," such as accidental death. An individual's hazard rate for a particular event varies based on their conditions and can be conceptualized as influencing the expected length of time until the event occurs. Based upon the many ties for age of entry into prostitution, the "exact" method of handling ties was employed (Allison 1995). Additionally, by only including risk factors associated with the women's early familial experiences, problems of causal order were minimized, as it is quite probable that the experiences included as risk factors did indeed precede entry into prostitution for the vast majority of the women involved. Other factors, such as personal drug or alcohol abuse, are not included in our analysis, to avoid causality questions that have plagued similar research. Indeed, past research has revealed that personal drug use may begin at relatively the same time or after entry into prostitution for anywhere from 35 to 52 percent of prostitutes (James and Meyerding 1977; Potterat et al. 1998; Kramer, Brenchley, and Mitchell 1999).

The life-tables method was used to generate estimates for the hazard functions and median residual lifetimes for various age ranges of entry into prostitution.

These estimates were calculated for the overall sample and were stratified by the key independent variables. The life-tables method is appropriate when there are numerous ties, as in these data. For ages 15 through 25, especially, many women entered prostitution at each of these ages.

It is important to note that the coefficients that are estimated using Cox regression models are not interpreted in the same manner as coefficients in multiple regression. The model on which this method is based is called a proportional-hazards model, "because the hazard for any individual is a fixed proportion of the hazard for any other individual" (Allison 1995, p. 114). Hence, variables with significant coefficients can be thought of as having a significant effect on the *relative timing* of entry into prostitution, not on whether or not a woman enters prostitution.

Initially, a proportional-hazards model was estimated with education, race, experience of sexual abuse, experience of physical abuse, and parental drug/alcohol abuse as separate independent variables and age of entry into prostitution as the dependent variable. Years of school and minority status had significant coefficients: education was associated with later entry (risk ratio = 0.88, $p < 0.001$), and minority status with earlier entry (risk ratio = 1.30, $p < 0.05$). These risk ratios indicate that, for every additional year of school completed, the hazard rate for entry into prostitution decreases by 12 percent, while minority status increases the hazard rate by approximately 30 percent. None of the coefficients for the childhood risk factors, however, were significant. This suggests that none of the separate risk factors significantly affects the relative timing of entry into prostitution above and beyond the influence of the other variables.

This result prompted us to further explore the possible influence of the childhood risk factors specified above by combining them into an index. Rather than looking at risk factors individually, the index reflects the number of factors an individual experienced without differentiating between them. In other words, a woman who experienced sexual abuse and physical abuse by family members but whose parents did not abuse alcohol or drugs (two risks) would appear the same on this index as a woman with one or more parents who abused alcohol or drugs, who was physically abused but not sexually abused by family members (two risks). To explore whether experience of risk factors interacted with minority status, interaction terms were created for minority status and each number of risks. The interaction term for one risk and minority status took on the value of 1 for minority individuals who had experienced one risk and zero for all others. The results of these analyses are described below.

Results

The respondents ranged in age from 18 to 64 years, with a median age of 31.50 years (S.D. = 8.26). In terms of race ($n = 309$), the majority of the

sample was white (62.1 percent), with blacks being the second largest group (14.9 percent) and Hispanics the next largest (12.9 percent). Six percent reported mixed ethnic background, and a small percentage was Native American (2.3 percent) or Asian-American (1.3 percent). Fifty-four percent of the respondents were single, while 24.5 percent were divorced, 12 percent were married, and 10 percent were separated. Years of education ranged from 3 to 17, with a mean of 11.0 years, and 32.7 percent of the sample completed high school. Approximately 20 percent of the sample also reported completing some college. There was no significant difference between minority and nonminority women in average number of years attending school or in the likelihood of having obtained a diploma or general equivalency diploma (GED).

Nearly half of the women had been physically abused by one or more family members (49.0 percent), and a similar percentage had been sexually abused by one or more family members (47.0 percent). Chi-square tests revealed that these risks were significantly and highly associated. Chi-square values were 24.03 ($df = 1, p < 0.001$) for the association between parental drug/alcohol abuse and sexual abuse, 65.64 ($df = 1, p < 0.001$) for the association between parental substance abuse and physical abuse, and 78.34 ($df = 1, p < 0.001$) for the association between sexual abuse and physical abuse. Clearly, when one of these risks is present, it is common for another risk to be present. The reported experience of risks differed for minority and nonminority women. Sixty-four percent of the white women reported drug/alcohol abuse on the part of one or more parents, compared to 53 percent of the minority women. This is a significant difference ($\chi^2 = 5.17, p = 0.02$). Whites were also significantly more likely to report sexual abuse by a family member ($\chi^2 = 8.18, p = 0.004$) or physical abuse by a family member ($\chi^2 = 3.75, p = 0.05$).

To give a sense of the distribution of the occurrence of entry into prostitution for the sample, a curve representing the hazard function for entry into prostitution is displayed (Figure 1). Since nearly one-half of the women entered prostitution between the ages of 15 and 25 inclusive, this age interval is represented in the figure. The hazard function can be interpreted as the risk of experiencing an event in a given time interval (in this case, one year), given that the individual has not experienced the event at the beginning of the interval (Allison 1995). For example, at age 18 the hazard function is 0.13: that is, for those women who had not entered prostitution by age 18, the probability of entry at that age (during that one-year interval) is 0.13. It is notable that this probability is a substantial jump from the hazard function for age 17 (0.07), which suggests that reaching the age of 18 is associated with a higher probability of entering prostitution compared to age 17.

Stratified life-table estimates were also calculated. The hazard-function curves are not significantly different by race, according to the difference in the $-2 \log$

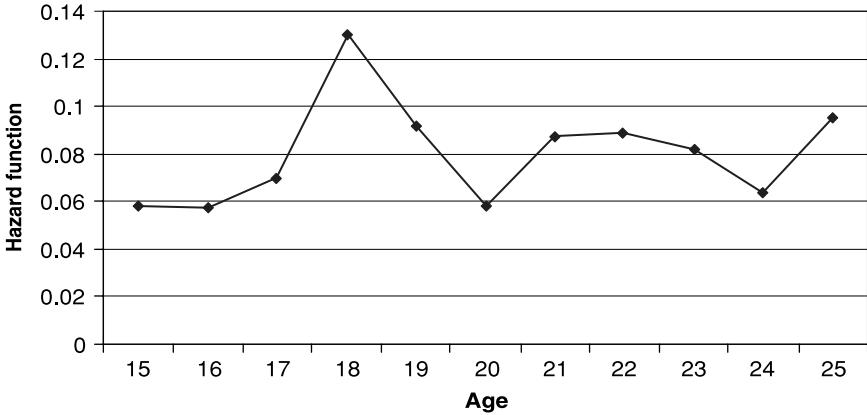


Figure 1

Hazard function for entry into prostitution ($n = 309$; entire sample included in calculation, only ages 15 to 25 years shown in graph). Value indicates the probability of entering prostitution at a certain age for those who have not entered by that age.

likelihood values, but there are differences that are notable in median residual lifetime for the two groups (Table 1). The median residual lifetime indicates that the median age of entry into prostitution for the overall sample is approximately 22.40 years. The median residual lifetimes indicate the new median age of entry for the portion of the sample that has not entered prostitution by a given age. For example, referring to Table 1, for those who have not entered prostitution by age 20, the new median age of entry is $20 + 7.54$ or 27.54 years of age. Median residual lifetimes, stratified by race, are also included in Table 1. When stratified by race, the median residual lifetimes are each about three years higher for whites, providing further evidence that minorities enter prostitution at earlier ages. At older ages, the gap narrows between the ages of entry for the two groups. For those who have not entered prostitution by age 30, the median residual lifetime for whites is only two years higher. For those that have not entered by 35, the median residual lifetime for whites is less than one year higher. For those that have not entered by age 40, the median residual lifetimes for minorities are a bit higher than for whites.

Table 2 includes median residual lifetimes stratified by experience of risk factors. There is a dramatic drop of 2.23 years in median age of entry for women who experienced one risk compared to those who experienced no risks. This drop in median age remains at all age intervals shown in the table. Although the differences are less than two years, their direction is still an important indicator

Table 1
Median Residual Lifetimes for Overall Sample and Stratified by Race

Lower Bound of Interval ^a	Overall Sample	Minority	Nonminority
0 (overall median)	22.40	20.89	23.56
15	7.31	7.10	9.87
20	7.54	6.11	9.29
25	8.02	5.75	7.78

^aThe median residual lifetime indicates the median number of years *until* entry into prostitution for women who have not entered prostitution by the age indicated. For example, minority women who have not entered prostitution by age 15 have a median age of entry of 15 + 7.10 or 22.10 years.

Table 2
Median Residual Lifetimes, Stratified by Risk Category

Lower Bound of Interval ^a	No Risks (<i>n</i> = 77)	One Risk (<i>n</i> = 74)	Two Risks (<i>n</i> = 67)	Three Risks (<i>n</i> = 91)
0 (overall median)	24.06	21.83	22.50	21.32
15	9.84	8.50	8.06	8.29
18	8.32	7.50	6.86	8.00
25	6.43	5.00	7.75	7.69

^aThe median residual lifetime indicates the median number of years until entry into prostitution for women who have not entered prostitution by the age indicated. For example, women who have not experienced any risks who have not entered prostitution by age 15 have a median age of entry of 15 + 9.84 or 24.84 years.

of the effect of experiencing a risk: namely, speeding up entry into prostitution. In addition, it appears that experiencing a second or third risk factor does not dramatically affect the median residual lifetimes, and the directions of any differences are inconsistent.

Table 3
 Risk Ratios^a for All Four Models Predicting Hazard Rate of Entry into
 Prostitution by Race, Education, and Experience of Risk Factors^b

Variable	Model 1	Model 2	Model 3	Model 4
Race	1.422**	1.209	1.134	.929
Education	.881***	.878***	.877***	.875***
One risk	1.433*	1.108	1.067	.954
Two risks	1.460*	1.396	1.271	1.144
Three risks	1.498*	1.421*	1.391*	1.160
One risk*race		2.097**	2.242**	2.761**
Two risks*race			1.306	1.599
Three risks*race				1.614
Model chi-square	30.18***	36.30***	36.95***	39.09
	5 df	6 df	7 df	8 df

^aTo calculate parameter coefficients from risk ratios, take the natural log of the risk ratio.

^b“No risks” is reference category.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Cox Regression Analysis

With the combined risk index, four proportional hazard models were estimated. Risk ratios are shown in Table 3 for all four models. In model 1, the proportional-hazard model for age of entry into prostitution is estimated using race, education, and number of risk factors experienced as independent variables and the experience of no risks as the reference category. In model 1, the coefficient for race is significant ($p < 0.01$) and the risk ratio indicates that the hazard rate for minorities is 42.2 percent higher than that of whites. The coefficient for education is also significant ($p < 0.001$), and the risk ratio indicates that for every one-year increase in education, the hazard rate for entry into prostitution decreases by approximately 12 percent. Each of the risk factor's coefficients are significant in model 1 ($p < 0.05$), with slight increases in the risk ratios as more risks are experienced. A Wald chi-square linear hypothesis test revealed that, although the parameter coefficients for the three risk factor variables are significantly different from zero, they are *not* significantly different from each other.

This suggests that the experience of a second or third risk factor does not significantly affect the hazard rate. Rather, it is the experience of the first risk, in comparison to experiencing no risks at all, that significantly affects the timing of entry into prostitution.

In model 2, an interaction term between race and experience of one risk is added. This interaction term is significant ($p < 0.01$), and, as might be expected, the main effects of race and experience of one risk are no longer significant. The interaction term indicates that if an individual is a minority *and* has experienced one risk, their hazard rate for entry into prostitution is approximately twice that of all other individuals in the sample. The improvement in model fit is also significant, with an increase in chi-square for the model of 6.12 for one degree of freedom ($p < 0.05$).

In models 3 and 4, interaction terms for two risks and race and three risks and race, respectively, are added. These interaction terms are not significant, however, and neither model 3 nor model 4 fits the data significantly better than model 2. In model 3, the risk ratio for one risk*race increases to 2.242 ($p < 0.01$) and in model 4, this risk ratio increases to 2.76 ($p < 0.01$), suggesting that the impact of being a minority and having experienced one risk is even higher than model 2 would indicate. However, since models 3 and 4 do not significantly fit the data better overall than model 2, in the interest of parsimony, it is from model 2 that conclusions will be drawn.

Conclusions

This study provides several significant findings regarding childhood abuse experiences and educational achievement for nonminority and minority women working in street-level prostitution. In our sample, white women who engaged in prostitution were more likely than minority women to have experienced sexual and physical abuse by one or more family members. White women in our sample were also more likely to report alcohol or drug abuse on the part of one or more of their parents while they were growing up. Minority women's median age of entry into prostitution, however, is approximately 2.5 years younger than that of nonminority women.

Through the use of event-history analysis, it is possible to assess the impact of childhood risks and minority status on the hazard rate for entry into prostitution. When a variable significantly influences the hazard rate for a certain event, it can be understood as influencing the relative timing of the event. This type of approach goes past work on the relative sequencing of events and actually suggests the extent to which experience of risk factors may accelerate women's entry into prostitution relative to others who do not have that experience. The outcome variable—a hazard rate—provides a more dynamic approach to understanding entry into prostitution than utilized in previous studies.

Findings from event-history analyses, using the childhood risk variables of sexual abuse, physical abuse, and parental drug abuse, revealed that none of these risks influenced the timing of entry above and beyond the other variables. However, when combined into an index variable signifying the number of risks, the experience of one risk did significantly increase the hazard rate for entry into prostitution relative to those experiencing no risks. Additionally, educational level and minority/nonminority status also exerted a significant effect on the timing of entry. Although whites are more likely than minorities to experience childhood abuse, it is minorities who consistently experience higher hazard rates for entry into prostitution. That is to say, in spite of experiencing childhood risks less often, minority women in our sample entered prostitution at significantly earlier ages than their white counterparts.

The findings can be interpreted in a variety of ways. As Gail Wyatt (1985) discusses, minorities and whites are not usually comparable in terms of their social-class backgrounds, and comparisons between the two groups can be problematic as a result. Diana Russell, Rachel Schurman, and Karen Trocki (1988, p. 121) have pointed out that centuries of racism have resulted in minority individuals' underrepresentation in the middle and upper classes of American society and that "[T]hese class dissimilarities make it difficult to ascertain whether other differences found are due to social class or to ethnicity, or to some combination of both of these variables." In this study, it is possible that the earlier age of entry into prostitution for minority women reflects lesser economic opportunities and other disadvantages associated with lower socioeconomic status. The heavy representation of African American and other nonwhite women among the homeless mirrors their heavy concentration in the ranks of the extremely poor (Rossi 1989; Massey and Eggers 1990; Massey, Gross, and Eggers 1992). Homelessness, while not examined specifically in this investigation, could be a variable worthy of future consideration. It is possible that social-class disadvantages are so compelling as to require the consideration of survival strategies such as prostitution at an earlier age due to a lack of financial and other resources. Furthermore, given that minorities disproportionately reside in poverty-stricken areas in which street-level prostitution occurs, exposure to and knowledge of the existence of prostitution may also influence minority women to enter prostitution sooner than white females, who reside in such areas to a lesser extent.

The consistent impact of education on decreasing the hazard rate for entry into prostitution suggests that school may provide a less risky environment in which individuals can spend their time. The 12-percent decrease in the hazard rate attributed to each additional year of school is more likely to be due to the women's presence in school than to represent actual knowledge gained in an additional year of education. This suggests further support for Angela Browne and David Finkelhor's (1986) proposal that the involvement in risky activities

or a dangerous lifestyle is important in determining the timing of entry into prostitution.

Another key finding is that the experience of a single childhood risk factor—whether it is sexual abuse or physical abuse by a family member or parental drug/alcohol abuse—appears to speed up entry into prostitution, relative to women who experience none of these risks. Additionally, minority women who experience one of these risks have a hazard rate for entry into prostitution that is approximately twice that of others in the sample. Further research using event-history analysis is likely to be useful in the examination of similar life pathways. The idea of a hazard rate associated with the entry into prostitution is conceptually rich and can be used with any variety of independent variables that are temporally prior to age of entry. As mentioned above, examination of contextual variables such as the labor market in an individual's neighborhood, socioeconomic status, and the existence of prostitution in an individual's neighborhood may be considerations worthy of future exploration. Such analyses could certainly lead to a deeper understanding of how race influences an individual's age of entry into prostitution, as neighborhoods are often highly segregated.

In conclusion, there is a great deal of room for further investigation of the life experiences and pathways that lead women to enter into prostitution. Event-history analysis may provide a particularly useful approach for exploring these issues, and the differential impact of risks on women of color clearly deserves further consideration.

ENDNOTES

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