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Permanency Outcomes of Children

in Kinship and Non-Kinship Foster Care

-Minimizing the Effects of Selection Bias

with Propensity Score Matching

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Eun Koh, PhD, MSW
Post Doctoral Research Associate

School of Social Work
University of Illinois at Urbana-Champaign

Study Background

- Increasing use of kinship placements

  - 23% of foster care population

- Interest in comparative outcomes of children in kinship & non-kinship foster care

  - Advantages of kinship placements: Placement stability & Foster care re-entry

  - Disadvantages of kinship placements: Legal permanence

- Limitations of previous literature

  - Issues of selection bias

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Purpose of Study

To examine permanency outcomes of children in kinship foster care in comparison with children in non-kinship foster care

- Addressing the problem of selection bias

- Considering the contexts of different state child welfare systems

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Null Hypotheses of Study

- Children in kinship foster care are no less likely to achieve *legal permanence* than children in non-kinship foster care.

- Children in kinship foster care are likely to *stay* in out-of-home care *no longer* than children in non-kinship foster care.

- Children in kinship foster care are no more likely to experience *placement stability* than children in non-kinship foster care.

- State policy contexts do not *moderate* the effects of the type of placement on permanency outcomes of children in care.

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Adoption and Foster Care Analysis
Reporting Systems (AFCARS) data

- Data for 6 states
  : AZ, CT, IL, MO, OH, & TN

- 6-month submissions
  from March 2000 to September 2005
  - Observational period of the study:
  from October 1, 1999 to September 30, 2005

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Study Sample

Children who entered out-of-home care
for the first time
between October 1, 1999 and September 30, 2004

Initial placement setting is
either relative or non-relative foster home

Analytic Method
- Propensity Score Matching

- PSM: Matches subjects on their conditional probability of group membership (a propensity score)

  - A propensity score: a single scalar variable that is calculated from observed covariates or conditioning variables

- Why PSM?*

  - In observational study: Dataset includes outcome data as well as covariates & treatment indicators

    → Regression analysis: Relates an outcome variable to observed covariates

    → PSM: Uses only the covariates, not the outcomes

* Rubin, 2001

Analytic Method
- Propensity Score Matching (Cont'd)

- Traditional Benchmarks for Use of Regression Adjustment*

1) Differences in the means of the propensity scores in the two groups being compared must be small

2) The ratio of the variances of the propensity score in the two groups must be close to one

3) The ratio of the variances of the residuals of the covariates after adjusting for the propensity score must be close to one

Example)
OH Sample

	Unmatched	Matched
1)	0.2284 (SD/2 = 0.1162)	-0.0029 (SD/2 = 0.0900)
2)	2.2159	1.0498
3)	3.0193	1.0436

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Propensity Score Matching (PSM) in the Study

- Was used to balance different characteristics of relative and non-relative foster homes

- Applied logistic regression model to predict the likelihood that a child would be placed in a relative foster home

    - Variables were selected based on previous literature and availability in AFCARS

- Created matched samples of kin & non-kin children

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Variables in Logistic Regression Model

- Child's age at removal, gender, race, & disability

- Reason for removal

- Year of entry

- County of service provision (largest vs. the others)

- Primary caregiver's age & marital status

- Primary foster caregiver's age & marital status

- Match of child and foster caregiver's race

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Analytic Method

- Analysis of Proportions

  - Compare relative and non-relative foster homes in different characteristics

  - Investigate permanency outcomes of children in relative and non-relative foster homes

- Analysis of Survival Times

  - Analyze permanency outcomes for children in relative and non-relative foster homes
    → Mainly, Accelerated Failure Time (AFT) Model
    → In addition, Cox Regression & Kaplan-Meier Model

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Analytic Method

- Survival Analysis

Model I	Model II	Model III
• Type of Placement (Kin) • State • Interaction of Kin & State	• Monthly Foster Care Payment ($) • Interaction of Kin & $	• Unmatched Sample - Covariates included in Logistic Regression Model •Matched Sample -Covariates still significantly different after matching

Study Findings

- Propensity Score Matching

Sample Size by State

	Unmatched Kin	Unmatched Non-Kin	Matched Kin	Matched Non-Kin
AZ	4,049	2,627	1,840	1,840
CT	1,161	3,149	942	942
IL	6,568	5,208	2,771	2,771
MO	2,502	4,650	2,155	2,155
OH	10,091	16,478	7,251	7,251
TN	1,982	5,974	1,872	1,872

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Study Findings

- Propensity Score Matching (Cont'd)

Characteristics of Relative & Non-Relative Foster Homes
- Example: child's age (category of age 0)

	Unmatched Kin	Unmatched Non-Kin	Matched Kin	Matched Non-Kin
AZ	13.93	41.80	29.08	28.53
CT	12.40	32.59	14.86	14.54
IL	27.73	46.77	38.58	38.54
MO	12.47	24.95	14.06	14.25
OH	17.21	25.07	19.43	20.02
TN	11.91	19.22	12.61	14.00

$p < 0.001$

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- Propensity Score Matching (Cont'd)

Characteristics of Relative & Non-Relative Foster Homes

- Before Matching

    - Significant differences

    - No consistent trend among states

        → Exception: foster caregiver's age & marital status

- After Matching

    - Complete matching: AZ, CT, MO, & TN

    - Incomplete matching: IL (1)* & OH (2)

* Figure in parenthesis represents the number of variables
 that were not completely matched

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Study Findings

- Analysis of Survival Times

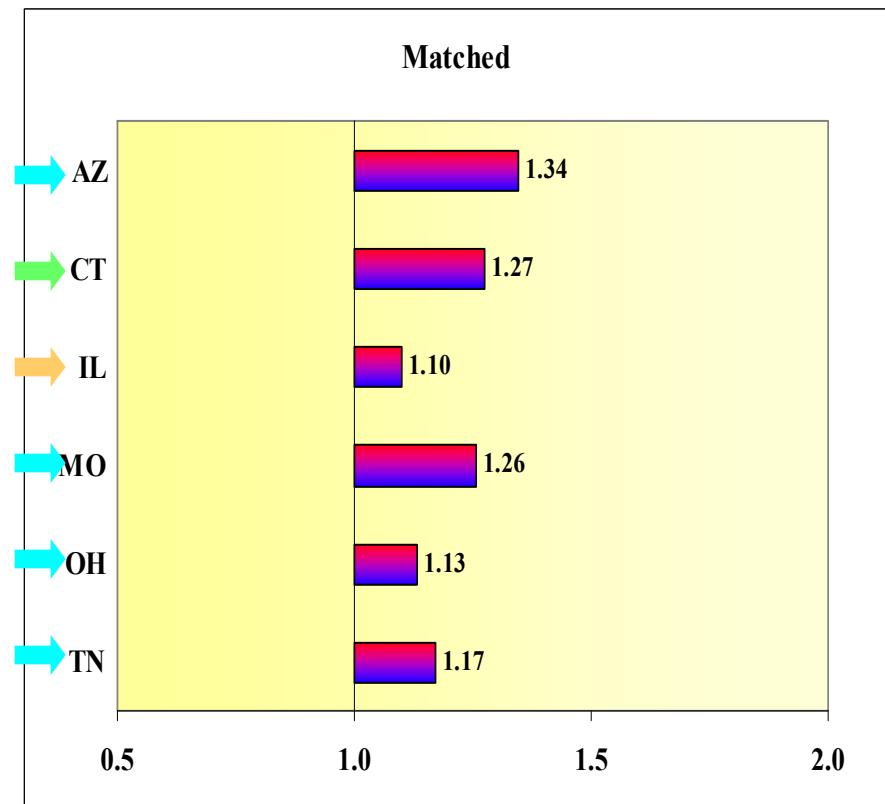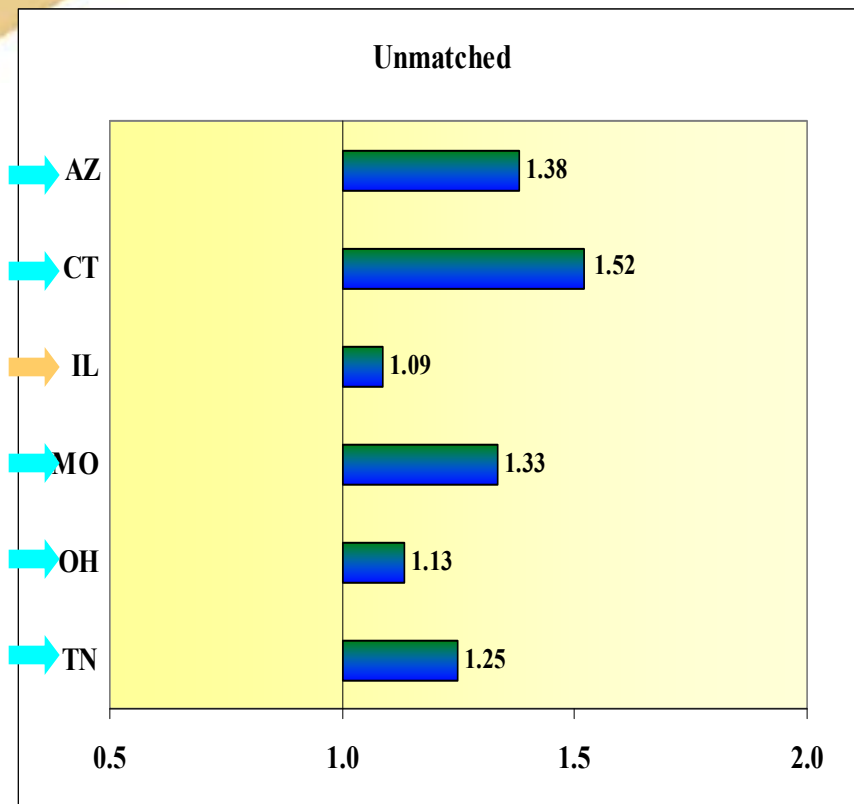Ratio of Expected Time to Second Placement (Kin vs. Non-Kin)*
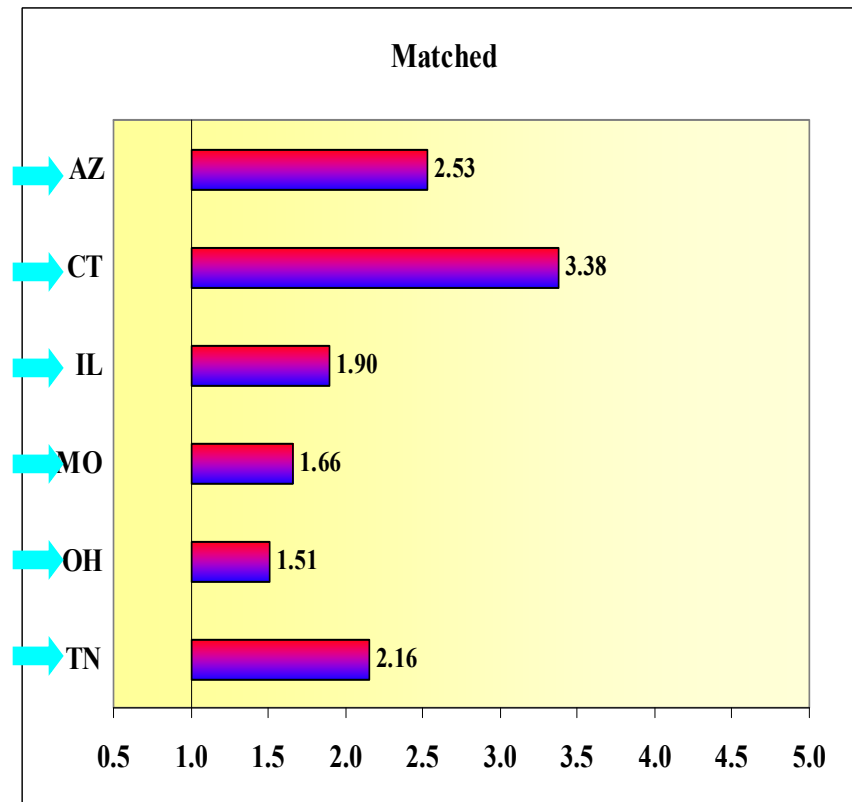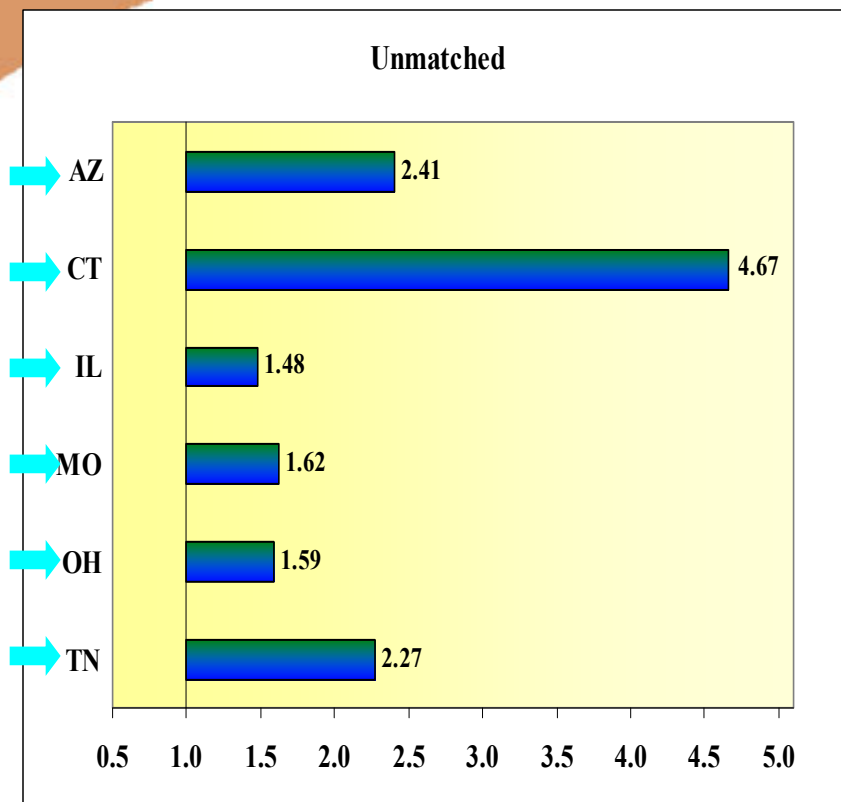
➡ p<0.001

• The figure greater than 1 indicates that it takes longer for children in relative foster homes to experience the event of interest

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Study Findings
- Analysis of Survival Times

Ratio of Expected Time to Third Placement (Kin vs. Non-Kin)

Unmatched	Matched
AZ 1.38	AZ 1.34
CT 1.52	CT 1.27
IL 1.09	IL 1.10
MO 1.33	MO 1.26
OH 1.13	OH 1.13
TN 1.25	TN 1.17

➡ p<0.05 ➡ p<0.01 ➡ p<0.001

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Study Findings

- Analysis of Survival Times

Ratio of Expected Time to Legal Guardianship (Kin vs. Non-Kin)

Unmatched

State	Ratio
AZ	0.36
CT	0.51
IL	0.20
MO	0.26
OH	0.51
TN	1.08

Matched

State	Ratio
AZ	0.51
CT	0.86
IL	0.63
MO	0.18
OH	0.61
TN	0.55

➡ $p < 0.05$ ➡ $p < 0.001$

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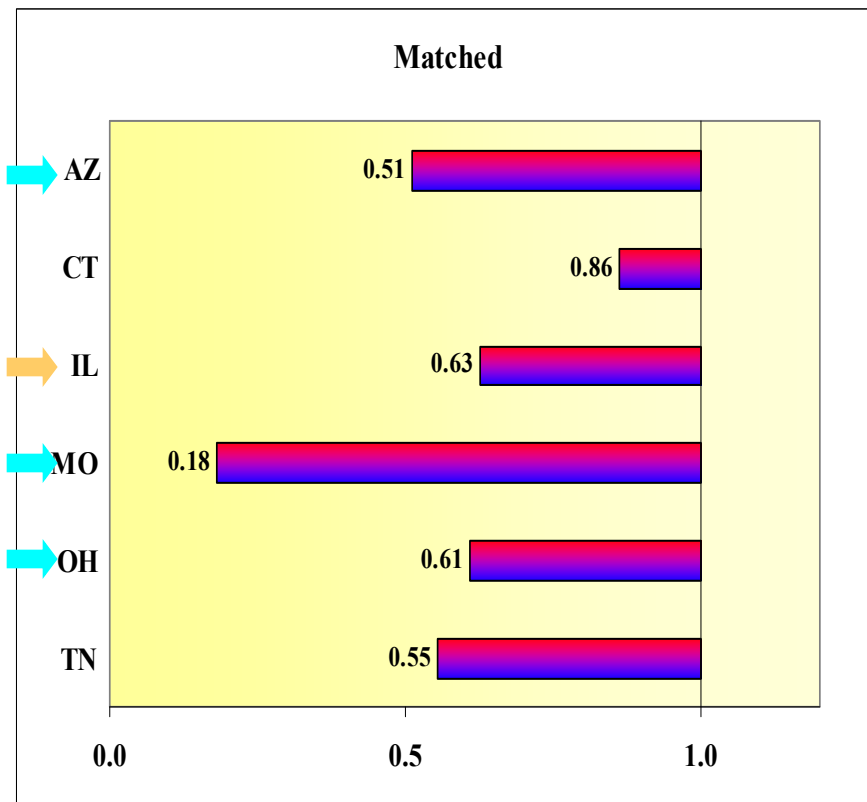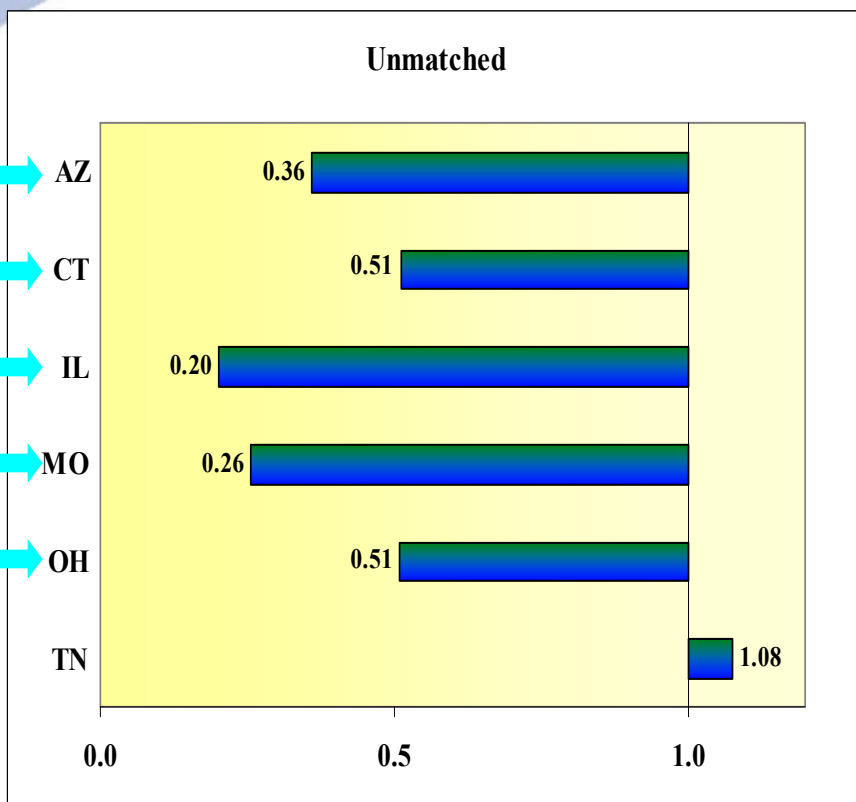
Study Findings

- Analysis of Survival Times
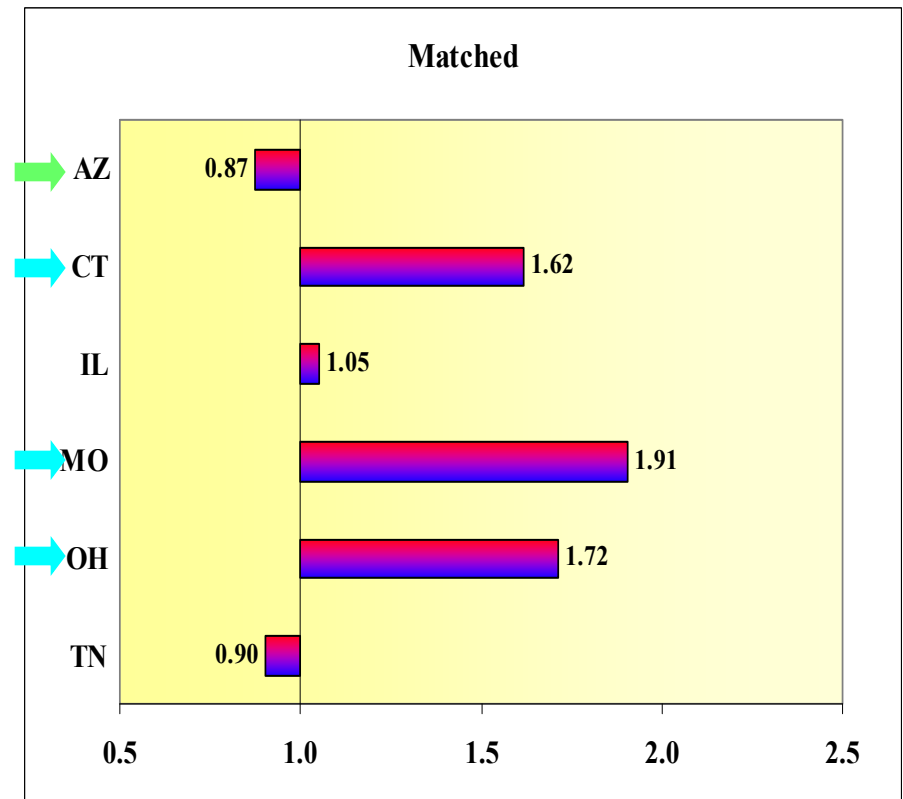
Ratio of Expected Time to Adoption (Kin vs. Non-Kin)
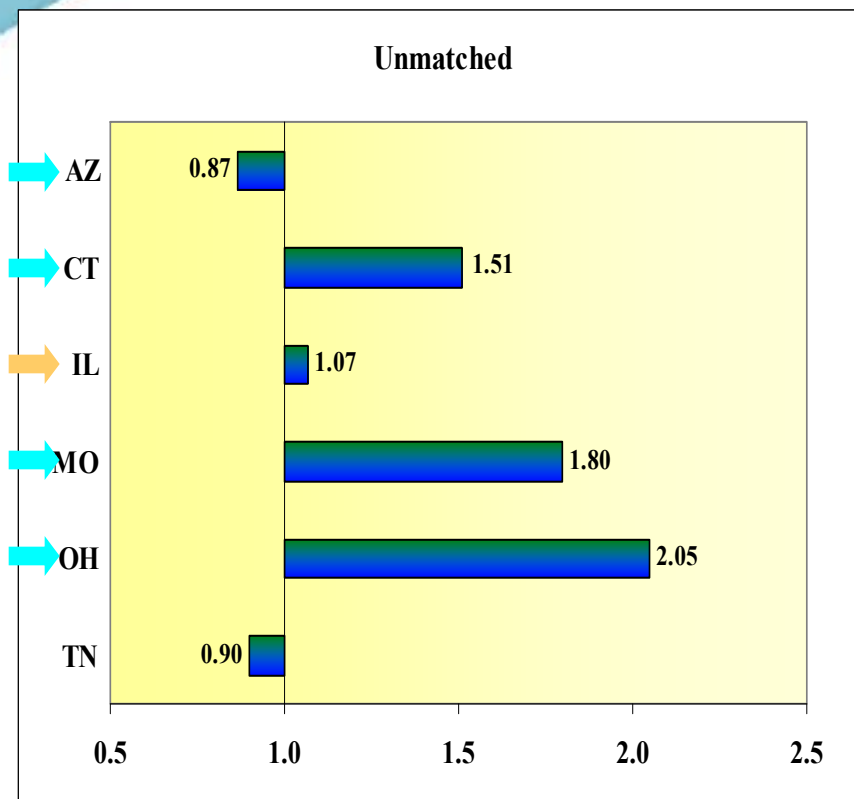
Unmatched

State	Value
AZ	0.87
CT	1.51
IL	1.07
MO	1.80
OH	2.05
TN	0.90

Matched

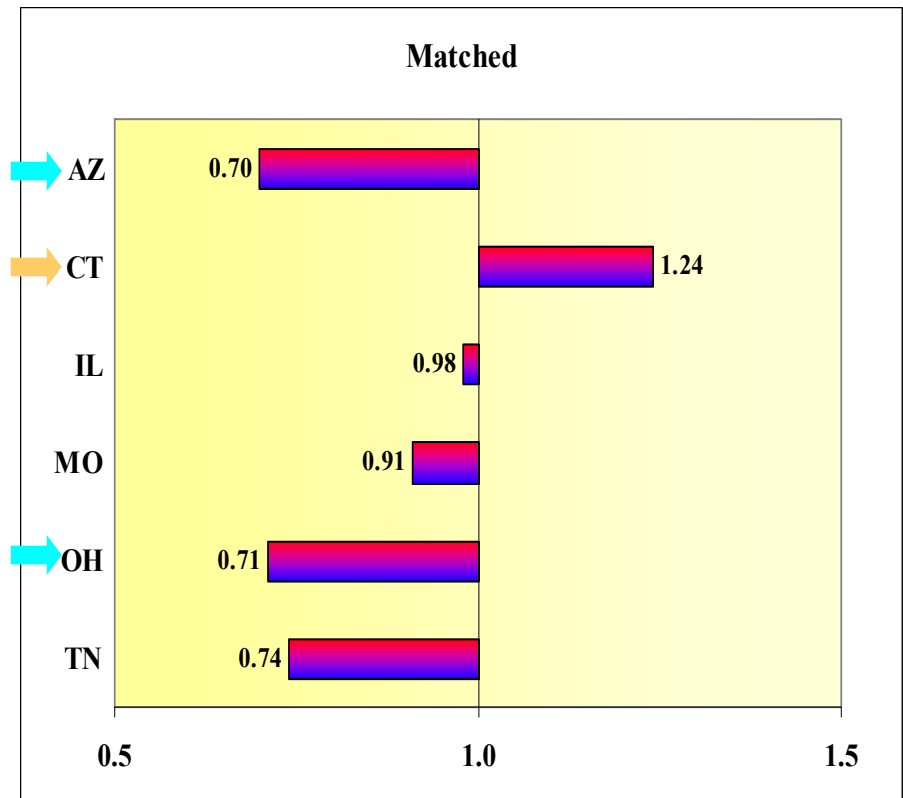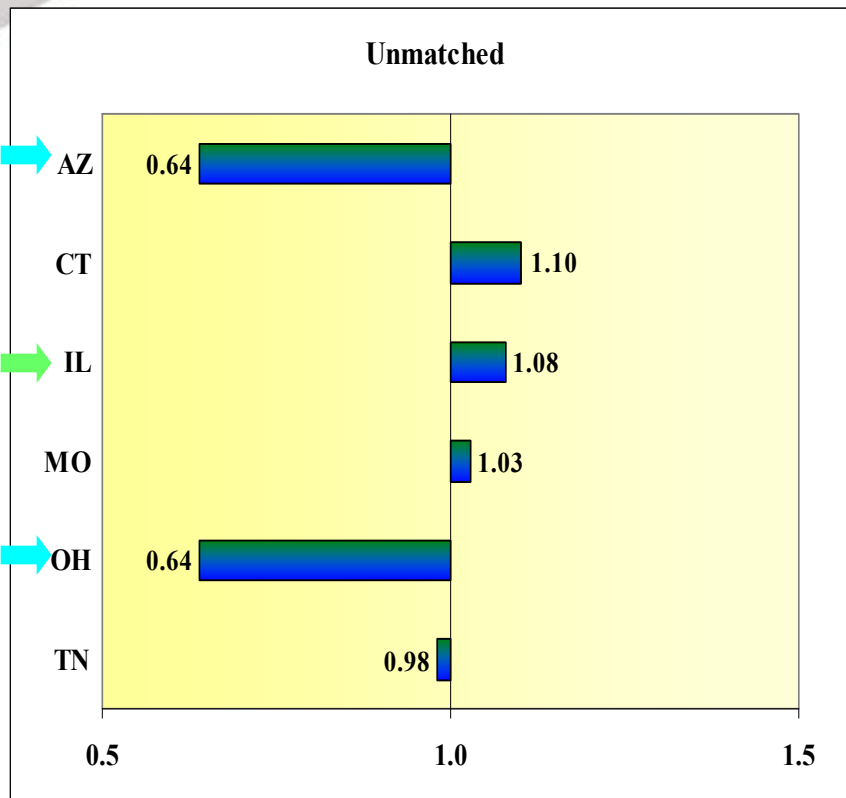| State	Value
AZ	0.87
CT	1.62
IL	1.05
MO	1.91
OH	1.72
TN	0.90

→ p<0.05   → p<0.01   → p<0.001

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Study Findings

- Analysis of Survival Times

Ratio of Expected Time to Legal Guardianship or Adoption (Kin vs. Non-Kin)

Unmatched

State	Ratio
AZ	0.64
CT	1.10
IL	1.08
MO	1.03
OH	0.64
TN	0.98

Matched

State	Ratio
AZ	0.70
CT	1.24
IL	0.98
MO	0.91
OH	0.71
TN	0.74

p<0.05   p<0.01   p<0.001

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Study Findings
- Analysis of Survival Times

Ratio of Expected Time to Reunification (Kin vs. Non-Kin)

Unmatched

State	Ratio
AZ	1.61
CT	1.87
IL	1.26
MO	0.88
OH	0.93
TN	0.96

Matched

State	Ratio
AZ	1.61
CT	2.42
IL	1.31
MO	0.97
OH	0.91
TN	0.88

➡ $p < 0.05$ ➡ $p < 0.01$ ➡ $p < 0.001$

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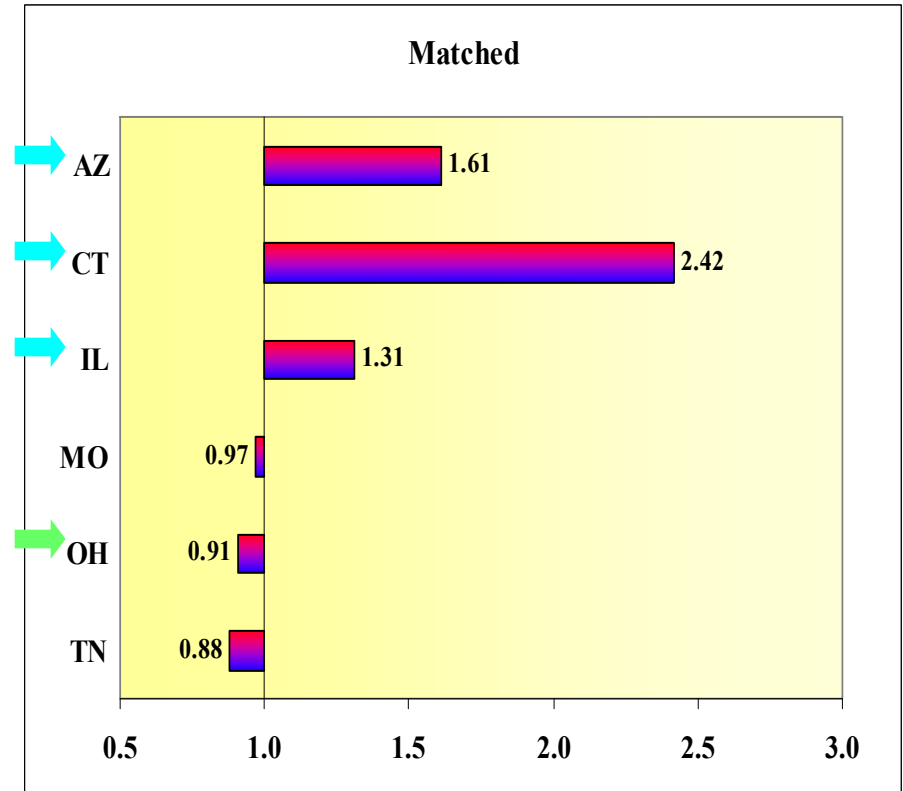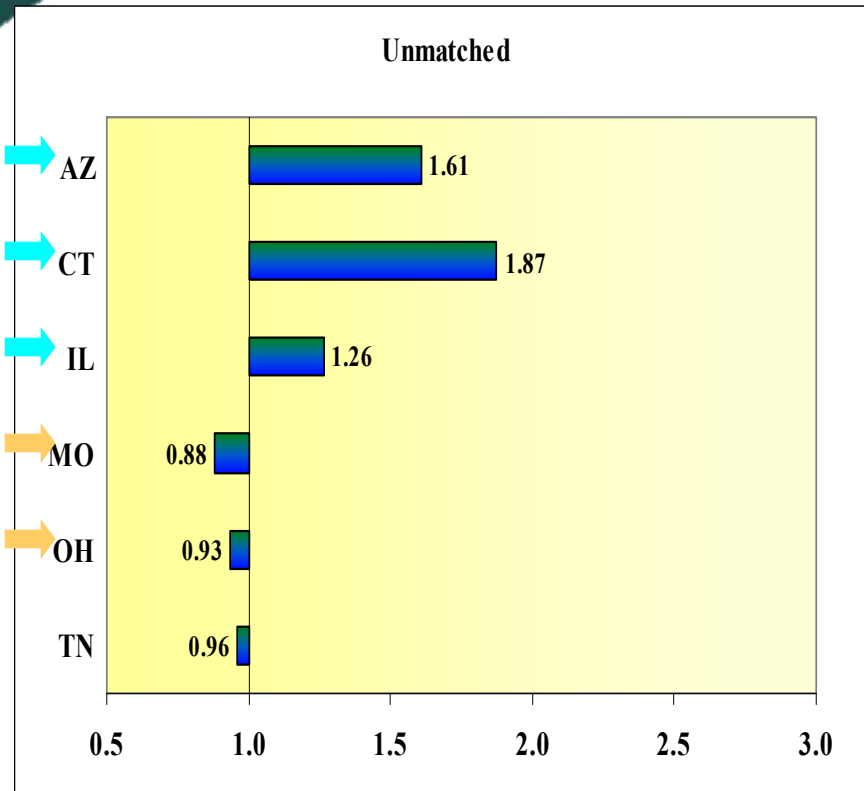
Study Findings
- Analysis of Survival Times

Ratio of Expected Time to Discharge (Kin vs. Non-Kin)

Unmatched

State	Value
AZ	1.05
CT	1.48
IL	1.18
MO	0.98
OH	0.68
TN	0.76

Matched

State	Value
AZ	1.11
CT	1.71
IL	1.10
MO	0.96
OH	0.67
TN	0.75

→ $p < 0.05$ → $p < 0.001$

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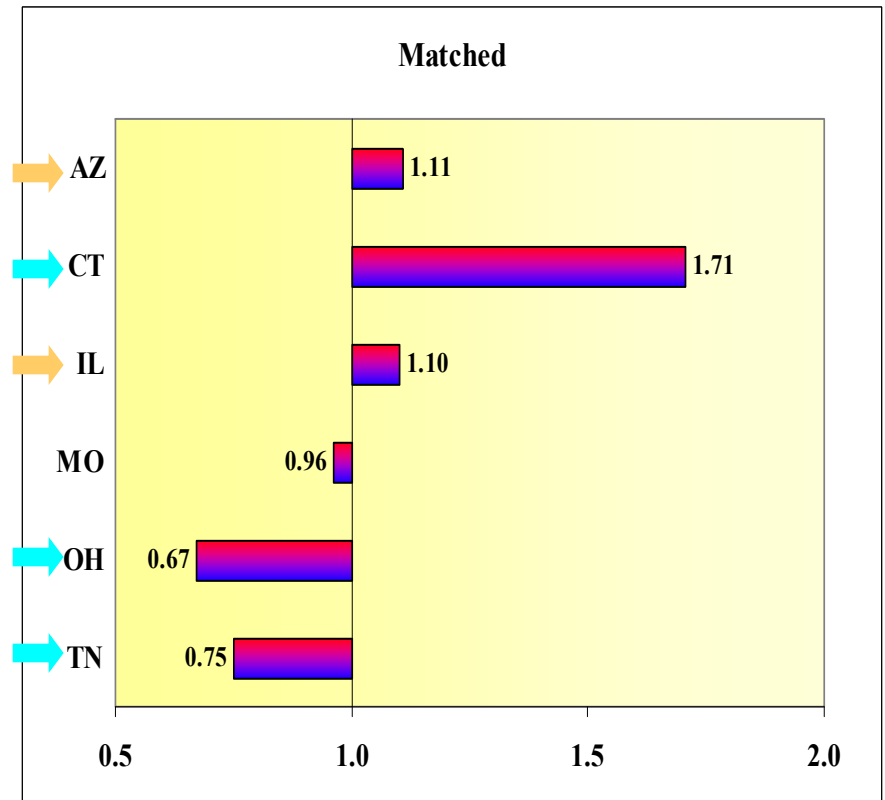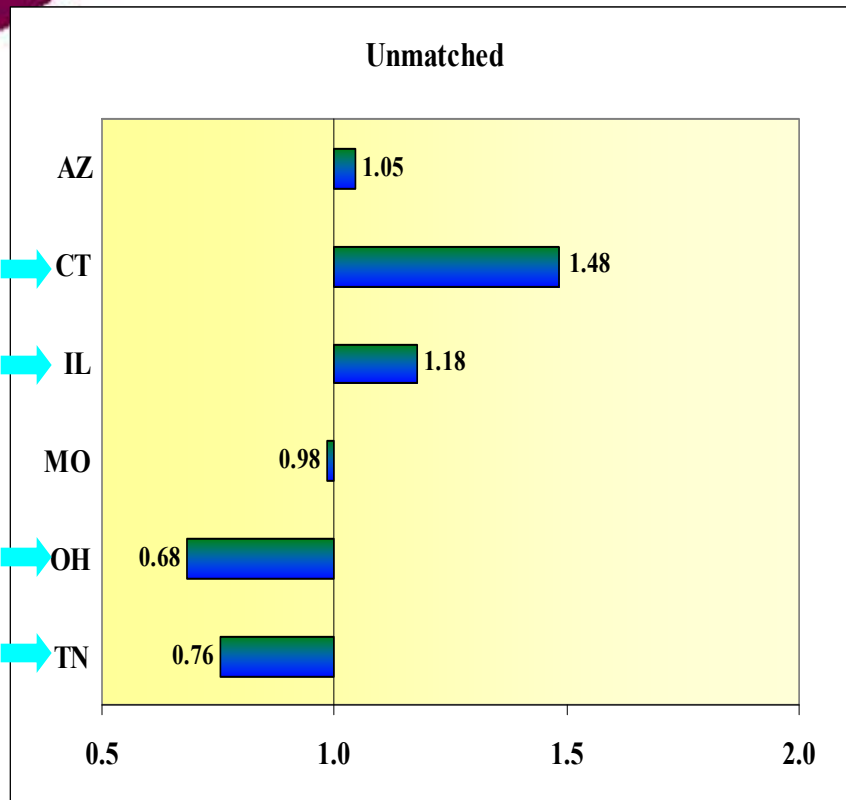
Study Findings

- Summary

- Children in kinship foster care are no less likely to *be reunified with their parents* than children in non-kinship foster care
  - The null hypothesis *was NOT rejected* in **MO, TN, & OH**
    - * In **OH**, children in kinship foster care were *more* likely to be reunified with their parents
  - The null hypothesis *was rejected* in **IL, AZ, & CT**

- Children in kinship foster care are no less likely to *be adopted* than children in non-kinship foster care
  - The null hypothesis *was NOT rejected* in **IL, TN, & AZ**
    - * In **AZ**, children in kinship foster care were *more* likely to be adopted
  - The null hypothesis *was rejected* in **CT, MO, & OH**

- Children in kinship foster care are no more likely to *achieve legal guardianship* than children in non-kinship foster care
  - The null hypothesis *was NOT rejected* in **CT & TN**
  - The null hypothesis *was rejected* in **AZ, IL, MO, & OH**

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Study Findings
- Summary

- Children in kinship foster care are likely to *stay* in out-of-home care *no longer* than children in non-kinship foster care

  - The null hypothesis *was NOT rejected* in **MO, OH, & TN**

    * In **OH & TN**, children in kinship foster care were more likely to stay in out-of-home care **shorter**

  - The null hypothesis *was rejected* in **IL, AZ, & CT**

- Children in kinship foster care are no more likely to experience *placement stability* than children in non-kinship foster care

  - The null hypothesis *was rejected* in **all 6 states**

- State policy contexts do not *moderate* the effects of the type of placement on permanency outcomes of children in care

  - The null hypothesis *was rejected*

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Contributions of Study

- Provided findings of multiple states

  - A majority of previous studies were based on administrative databases from CA and IL

  - Present study used AFCARS data for 6 states

- Applied longitudinal research design

  - Many of previous studies used cross-sectional research design

  - Studies that adopted longitudinal research design used samples from 1980s or 90s

  - Present study created a partially longitudinal file based on AFCARS 6-month submissions

  - Present study used the most current samples

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Contributions of Study

- Provided findings on a variety of permanency outcomes

  - Prior literature provides limited evidence in the outcome areas of length of stay & foster care re-entry

  - Prior literature reports inconclusive findings for the outcome of legal permanence

  - Present study examined the outcomes of legal permanence, length of stay, & placement stability

- Addressed the issues of selection bias

  - Prior literature relied on regression analysis in controlling for the problem of selection bias

  - Present study balanced the different characteristics of relative and non-relative foster homes, using the method of Propensity Score Matching (PSM)

  - Present study compared the findings based on unmatched and matched samples

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Study Limitations

- Issues with PSM

  - Study was unable to balance unobserved differences between relative & non-relative foster homes

  - Study was unable to incorporate all of the variables that should be balanced in logistic regression model

- Issues with AFCARS dataset

  - AFCARS data that were used in the study had a large number of missing values on caregiver- or foster caregiver-related variables

  - The level of data comparability among states is unknown

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Implications of Study

- Variations among States

  - The effects of state-specific policy & practice regimes should be examined in the future

- Advantages of Relative Family Foster Care

  - Relative foster homes have better outcomes in the areas of legal guardianship & placement stability

- Characteristics of Kinship Caregivers

  - Kinship caregivers were more likely to be older and single

  - The moderating/mediating effects of such characteristics on children should be explored in the future

  - The service needs of kinship caregivers should be examined in the future

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Thank You!!!
Thank You!!!
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Contact Information:
eunkoh@uiuc.edu

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