Critical Analysis Problem 2 – July 2022

(21 marks)

Please read the following abstract, tables and figures and answer the questions based on this information and your other knowledge.

‘Court diversion for those with psychosis and its impact on re-offending rates: results from a longitudinal data-linkage study

Olayan Albalawi, et al,
Ref: BJPsych Open (2019) 5, e9, 1–9. doi: 10.1192/bjo.2018.71

ABSTRACT:

Background: With significant numbers of individuals in the criminal justice system having mental health problems, court-based diversion programmes and liaison services have been established to address this problem.

Aims: To examine the effectiveness of the New South Wales (Australia) court diversion programme in reducing re-offending among those diagnosed with psychosis by comparing the treatment order group with a comparison group who received a punitive sanction.

Methods: Those with psychoses were identified from New South Wales Ministry of Health records between 2001 and 2012 and linked to offending records…

Results: A total of 7743 individuals were identified as diagnosed with a psychotic disorder prior to their court finalisation date for their first principal offence.

The re-offending rate in the treatment order group was 12% lower than the punitive sanction group. ‘Acts intended to cause injury’ was the most common type of the first principal offence for the treatment order group compared with the punitive sanction group (48% v. 27%). Drug-related offences were more likely to be punished with a punitive sanction than a treatment order (12% v. 2%).

Conclusions: ……’

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.01

(1 mark)

Which option MOST ACCURATELY describes this study?

A. Aetiology.
B. Intervention.
C. Observational.
D. Qualitative.
E. Screening intervention.
F. Systematic review.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.02

(1 mark)

Which option MOST ACCURATELY describes this study method?

A. Case control study.
B. Case series.
C. Cohort study.
D. Cross sectional study.
E. Ecological study.
F. Population study.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.03

(1 mark)

Which type of study could be used to monitor the re-offending rates prospectively in the identified population?

A. Case control study.
B. Case series.
C. Cohort study.
D. Cross sectional study.
E. Ecological study.
F. Population study.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.04

(2 marks)

Which option MOST ACCURATELY describes the form of bias from sub-optimal or incomplete data in data linkage studies from the data linkage methodology?

A. Attribution bias.

B. Confounding variables bias.

C. Observer bias.

D. Publication bias.

E. Reporting bias.

F. Systematic bias.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.05

(2 marks)

Which option describes the main advantage of a data linkage study?

A. Can be used to guide health system decisions without concern for missing data because of the size of the data sources.

B. It is a flexible source of data and unrecorded information can be used for data analysis.

C. Reduces the bias of smaller samples used in epidemiological surveys.

D. Uses data from multiple sources which already exist.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.06

(2 marks)

Which of these research project options would be better addressed by a treatment sample survey than a data linkage model?

A. Matching offender data to health status to assess treatment impact.

B. Long term follow-up of large samples of populations and their health service needs and use.

C. Qualitative research on attitudes to mental health access services.

D. Research on a low prevalence medical condition.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.07

(2 marks)

What is the main aim of this data linkage study?

A. To assess the court diversion program effect in reducing reoffending among those diagnosed with psychosis.

B. To compare the treatment outcomes of people with a psychosis who recieved a treatment order versus punitive sanctions.

C. To link the data from the criminal justice system and the health services.

D. To reduce the numbers of of individuals with mental health problems in the criminal justice system.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.08

(1 mark)

Which of the statistical tests listed could be applied to examine the difference between treatment order and punitive sanction for men?

A. Chi².
B. Cox regression analysis.
C. I^2.
D. Risk ratio.
E. Sensitivity analysis.
F. Tau^2.

Based on the abstract and your other knowledge choose the best option to answer the question.

Question 2.09

(1 mark)

Which of the options is a measure of the percentage of variance in a meta-analysis that is attributable to study heterogeneity?

A. Chi².

B. Cox regression analysis.

C. I^2.

D. Risk ratio.

E. Sensitivity analysis.

F. Tau^2.

Based on the abstract, the phrase below and your other knowledge choose the best option to answer the question.

Question 2.10

(2 marks)

'Cox regression models were used to identify factors associated with re-offending.'

Which option describes the reason for using the Cox regression model to identify factors associated with re-offending?

A. Need to estimate the survival curve for reoffending.

B. Need to compare those who do re-offend with those who do not.

C. Need to examine the effect of multiple covariates on re-offending.

D. Need to find the correlation between reoffending and court diversion.

Based on the abstract, Table 1 and your other knowledge choose the best option to answer the question.

Question 2.11

(2 marks)

Table 1

Characteristic of diversion programme group versus punitive sanction group

	Total (n = 7743)			Men (n = 5643, 73%)			Women (n = 2100, 27%)		
	Treatment order (n = 1996, 26%)	Punitive sanction (n = 5747, 74%)	P	Treatment order (n = 1467, 26%)	Punitive sanction (n = 4176, 74%)	P	Treatment order (n = 529, 25%)	Punitive sanction (n = 1571, 75%)	P
Psychosis type									
Schizophrenia and related psychoses	1608 (81)	3743 (65)	<0.001	1191 (81)	2773 (66)	<0.001	417 (79)	970 (62)	<0.001
Affective psychosis	241 (12)	555 (10)		169 (12)	362 (9)		72 (14)	193 (12)	
Substance-related psychosis	147 (7)	1449 (25)		107 (7)	1041 (25)		40 (8)	408 (26)	
Socio-Economic Indexes for Areas									
Advantaged (6–10)	1208 (61)	3065 (53)	<0.001	870 (59)	2220 (53)	<0.001	338 (64)	845 (54)	<0.001
Disadvantaged (1–5)	788 (39)	2682 (47)		597 (41)	1956 (47)		191 (36)	726 (46)	

Which group is MOST LIKELY to receive a punitive sanction compared to a treatment order?

A. Men with a schizophrenia and related psychosis.

B. Men with an affective psychosis.

C. Women and men with a substance related psychosis.

D. Women with a schizophrenia and related psychosis.

E. Women with an affective psychosis.

Based on the abstract, Table 1 and your other knowledge choose the best option to answer the question.

Question 2.12

(2 marks)

Table 1

Characteristic of diversion programme group versus punitive sanction group

	Total (n = 7743)			Men (n = 5643, 73%)			Women (n = 2100, 27%)		
	Treatment order (n = 1996, 26%)	Punitive sanction (n = 5747, 74%)	P	Treatment order (n = 1467, 26%)	Punitive sanction (n = 4176, 74%)	P	Treatment order (n = 529, 25%)	Punitive sanction (n = 1571, 75%)	P
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Disadvantaged (1–5)	788 (39)	2682 (47)		597 (41)	1956 (47)		191 (36)	726 (46)	

Which group had the highest frequency of a punitive sanction outcome?

A. Men with a schizophrenia and related psychosis.

B. Men with as substance related psychosis.

C. Men with an affective psychosis.

D. Women with a schizophrenia and related psychosis.

E. Women with a substance related psychosis.

F. Women with an affective psychosis.

Based on the abstract, Table 3 and your other knowledge choose the best option to answer the question.

Question 2.13

(2 marks)

Table 3

Adjusted hazard ratios (HRs)[a] for re-offending among men and women

	Overall ($n = 7743$)			Men ($n = 5643$; 73)			Women ($n = 2100$; 27)		
	n (%)	Adjusted HR (95% CI)	*P*	*n* (%)	Adjusted HR (95% CI)	*P*	*n* (%)	Adjusted HR (95% CI)	*P*
Group									
Punitive sanction	5747 (74)	1		4176 (74)	1		1571 (75)	1	
Treatment order	1996 (26)	0.68 (0.62–0.74)	<0.001	1467 (26)	0.65 (0.59–0.72)	<0.001	529 (25)	0.78 (0.66–0.92)	<0.001
Psychosis type									
Affective psychosis	796 (10)	1		531 (9)	1		265 (13)	1	
Schizophrenia and related psychoses	5351 (69)	1.19 (1.05–1.34)	0.005	3964 (70)	1.15 (1.00–1.33)	0.058	1387 (66)	1.32 (1.06–1.64)	0.014
Substance related psychosis	1596 (21)	1.46 (1.27–1.67)	<0.001	1148 (20)	1.47 (1.25–1.73)	<0.001	448 (21)	1.41 (1.09–1.82)	0.008
First principal offence type									
Violent	3288 (43)	1		2399 (43)	1		889 (42)	1	
Non-violent	4455 (57)	1.20 (1.12–1.28)	<0.001	3244 (57)	1.24 (1.15–1.34)	<0.001	1211 (58)	1.07 (0.94–1.23)	0.279

a. Adjusted by age, marital status, country of birth and psychosis type.

Which option is the factor which contributes to the reduction in risk of reoffending for the total group?

A. Having a substance related psychosis.

B. Having an affective psychosis.

C. Having schizophrenia and related psychosis.

D. Where the first offence is non-violent.

E. Where the first offence is violent.

F. Where the outcome is a punitive sanction.

G. Where the outcome is a treatment order.