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EDITORIAL

International Journal of Risk and Recovery
EST. 2017

Coping With COVID-19: Pandemic Life and Problematic Sexual Behaviour

Heather Moulden,[1,2] John Bradford[1–3]

[1] Forensic Psychiatry Program, St. Joseph's Healthcare Hamilton, Hamilton, Canada; [2] Department of Psychiatry and Behavioural Neuroscience, McMaster University, Hamilton, Canada; [3] Department of Psychiatry, University of Ottawa, Ottawa, Canada

As a result of COVID-19 related restrictions around the globe, individuals have experienced a stark shift in the way we socialize and connect. This has impacted many facets of people's lives, one being sexual experience and expression. Although the fact that sex and sexuality were affected by the pandemic and the public health measures and restrictions is no surprise, the specific impacts are proving to be quite fascinating and unexpected. On the one hand, we may predict increased intimacy among partners due to closer proximity and more time together. However, a counter point could be that all that time together combined with the stress of the pandemic suffocated desire. And what about sexual interests? How and why might those be a casualty of pandemic life?

Recent research has examined how lockdowns affect sexuality. For example, in a large online survey of 1,559 adults from predominantly western countries, respondents were asked about the pandemic's impact on their sex life [1]. The findings confirmed that life during the pandemic was related to reduced desire, and both partnered and solo sexual activity. However, among a small group of young, single people, the authors described increased sexual activity and diversity compared with pre-COVID sexual interests and activities, such that their interests became broader after COVID-19 started. In fact, 20% of participants reported that they had tried a new sexual behaviour during the pandemic [1]. Interestingly, this group also described feeling more stressed and lonelier, which raises questions about the use of sex as a coping mechanism for psychological distress.

This issue of sex and coping was explored further using a web-based survey that inquired about the sexual functioning of approximately 650 adult men and women during COVID-19 confinement in Portugal. Interestingly, psychological adjustment mediated the relationship between confinement and lower sexual functioning (e.g., satisfaction, erectile dysfunction) for men, but not women [2], suggesting that a person's stress and capacity to cope with stress can impact one's sexual expression, functioning, and satisfaction. Another recent study provided further evidence of the increased reliance on sex as coping during the pandemic [3]. This online survey in the U.K. inquired about the effects of social distancing, loneliness, difficulties in emotion regulation, and self-regulation on participants' self-reported coping using sex during lockdown. Based on 789 respondents, results indicated there was no overall increase in coping using sex during lockdown compared with before lockdown. However, upon closer inspection, a third of the sample (30%) reported increased coping using sex during lockdown compared with before, 29% reported decreased coping using sex compared to pre-COVID lockdown, and 41% reported no change in sexual coping related to the pandemic. Among those

with increased sexualized coping, the predictors included being younger, being male, and having greater emotion dysregulation.

If people are feeling less connected or lonely, and turning to novel or diverse sexual activity to cope, what does this mean for atypical or paraphilic interests? Are we seeing more problematic sexual fantasy or behaviour? These become important questions given the extant literature on individuals who engage in problematic sexual behaviour and sex as coping. This research shows emotion-focused coping, and sexualized coping specifically, among those who sexually abuse children [4,5]. Therefore, given emergent findings on changes in atypical sexual behaviour related to the pandemic, we must question the role that coping may play. Although no research on this has been published yet, a recent paper reported increased website activity for online treatment for the use of child sexual abuse material (CSAM) [6]. Not only did the authors find a four-fold increase in the number of users pre- to post-lockdown, but they also observed how chat themes changed with the pandemic. Specifically, users evidenced an increased preoccupation with child sexual abuse and seeking out more extreme CSAM on the darknet, and self-reported relapses among those who had previously quit accessing CSAM. Other concerning themes included reported increased access to children due to home-schooling or babysitting, with instructions about how to access children to produce and share more CSAM.

While reports of sexual abuse rates during the pandemic are not available yet, research into other types of violence related to confinement and other public health measures, suggests that official reporting decreased [7]. However, this finding may more accurately reflect the increased barriers to reporting, such as restricted access to community and support services, as well as personal supports, and confidants; loss of opportunity for private disclosure to teachers or other trusted adults; and proximal or physical interference by the individual perpetrating violence.

As we continue to live through this pandemic, the ways in which it affects relationships and sex (including how we adapt to these changes) presents many opportunities for learning. Of particular interest is the effects of social isolation on sexuality and expression, and when this becomes problematic. So far, it seems that how we cope with the pandemic (and all its impacts) mediates the ultimate effect. However, those who may have vulnerabilities to atypical or problematic sexual interests and behaviours may be at particular risk given the potentiating effects of stress and loss in a time of poor access to supports and services. The emerging research is also beginning to reveal the indirect costs of the pandemic to sexuality, including effects on marital and partnered relationships, sexual functioning, problematic sexual interests, and sexual abuse, which for now appear to be buried, even more than before. It appears that COVID-19 has had many deleterious impacts on sexuality, the true extent of which we may only fully know in the years to come.

While we work to better understand how the COVID-19 pandemic changed sex, we believe that clinical research and practice should attend to both sexual functioning and coping in general, but with particular attention to those with limited social and practical resources, those with psychological vulnerabilities to maladaptive coping (e.g., substance misuse), and those with histories of problematic sexual interests and behaviours. Furthermore, we must go beyond simply the broad pandemic experience to better understand the specific risks—such as loss of work, social isolation, health-related anxiety, trauma, loss, and financial strain (to name but a few)—and the liability they confer on sexual behaviour and through what means. This is complex work, the foundation of which is being built as we try to answer these important questions. But more crucially, we must act quickly and correctly to help those in need and protect those at risk.

Conflict of Interest: none

References

1. Lehmiller JJ, Garcia JR, Gesselman AN, Mark KP. Less sex, but more sexual diversity: Changes in sexual behavior during the COVID-19 coronavirus pandemic. *Leisure Sciences*. 2020;43(1-2):295-304. https://doi.org/10.1080/01490400.2020.1774016.

2. Carvalho J, Campos P, Carrito M, et al. The relationship between COVID-19 confinement, psychological adjustment, and sexual functioning, in a sample of Portuguese men and women. *The Journal of Sexual Medicine*. 2021;18(7):1191-1197. https://doi.org/10.1016/j.jsxm.2021.04.007.

3. Gillespie SM, Jones A, Uzieblo K, et al. Coping using sex during the coronavirus disease 2019 (COVID-19) outbreak in the United Kingdom. *The Journal of Sexual Medicine.* 2021;18(1):50-62. https://doi.org/10.1016/j.jsxm.2020.11.002.

4. Cortoni F, Marshall WL. Sex as a coping strategy and its relationship to juvenile sexual history and intimacy in sexual offenders. *Sexual Abuse*. 2001;13(1):27-43. https://doi.org/10.1177/107906320101300104.

5. Feelgood S, Cortoni F, Thompson A. Sexual coping, general coping and cognitive distortions in incarcerated rapists and child molesters. *Journal of Sexual Aggression*. 2005;11(2):157-170. https://doi.org/10.1080/13552600500073657.

6. Parks A, Sparre C, Söderquist E, Arver S, Andersson G, Kaldo V, et al. Illegal online sexual behavior during the COVID-19 pandemic: A call for action based on experiences from the ongoing prevent it research study. *Archives of Sexual Behavior*. 2020;49:1433-1435. https://doi.org/10.1007/s10508-020-01750-7.

7. Payne JL, Morgan A, Piquero AR. COVID-19 and social distancing measures in Queensland, Australia, are associated with short-term decreases in recorded violent crime. *Journal of Experimental Criminology*. 2020:1-25. https://doi.org/10.1007/s11292-020-09441-y.

Corresponding author

Dr. Heather M. Moulden, Clinical Forensic Psychologist, Forensic Psychiatry Program, St. Joseph's Healthcare Hamilton, West 5th Campus, 100 West 5th Street, Hamilton, ON L8N 3K7 Canada – email: hmoulden@stjosham.on.ca.

ORIGINAL ARTICLE

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Examination of the Structured Assessment of Protective Factors for Violence Risk - Youth Version (SAPROF-YV) in Canadian Adolescents

Aisha K. Christiansen,[1] Jodi L. Viljoen,[1] Erin K. Fuller[1]

[1] *Department of Psychology, Simon Fraser University, Burnaby, Canada*

The Structured Assessment of Protective Factors for Violence Risk - Youth Version (SAPROF-YV) is a new measure of protective factors. It is used with a risk-focused tool, such as the Structured Assessment of Violence Risk in Youth (SAVRY), to provide a more balanced and comprehensive assessment of violence risk in adolescents. Our study investigated the relationship between the SAPROF-YV and aggression in a sample of 69 adolescents. Using a retrospective follow-up study design, we reviewed files at an inpatient treatment centre and a probation office. The SAPROF-YV showed good convergent and discriminant validity with the SAVRY. The SAPROF-YV was predictive of the absence of minor verbal aggression. While the SAPROF-YV added incremental predictive validity to SAVRY Protective factors for minor verbal aggression, it did not add incrementally to SAVRY Risk factors in the prediction of any type of aggression. We discuss implications for future research and clinical applications.

Keywords: *protective factors, aggression, adolescence, risk assessment, violence*

Several adolescent risk assessment tools have been developed to aid in the prediction and management of risk for reoffending [1]. These tools often include risk factors (i.e., factors that increase the likelihood of violence or offending) such as peer delinquency and poor parental monitoring [2]. However, several scholars have highlighted that violence risk assessments overemphasize risk factors and underemphasize protective factors [3,4].

Protective factors decrease the likelihood of future violence [5–7]. For instance, support from parents, positive peer relationships, and interest in schoolwork are considered protective factors for aggression and violence [8]. Some researchers have focused on whether protective factors represent the opposite end of risk factors or if they represent unique nonoverlapping factors. Other researchers have considered whether protective factors exert main effects (i.e., direct and independent impacts) on an undesired outcome or have moderated buffering effects (i.e., dependent interactions with risk factors) to reduce negative outcomes in adolescents considered high risk [9].

Despite the debate about the conceptualization of protective factors, researchers have highlighted the importance of the inclusion of protective factors in violence risk assessment to provide a more balanced and comprehensive assessment of risk [8,10]. For instance, including protective factors may provide a more accurate prediction of violence risk,

increase the focus on violence prevention [11], and promote a positive perspective for treatment providers and offenders [12].

Existing Research on Measures of Protective Factors

Although most risk assessment tools, particularly those for adults, fail to incorporate protective factors, a few tools for adolescents include protective factors. One of the most common of these tools is the Structured Assessment of Violence Risk in Youth (SAVRY) [2], which is a structured professional judgment (SPJ) tool that assesses risk for violent behaviour in adolescents. The SAVRY includes 24 risk items (rated as low, moderate, or high) within Historical, Individual/Clinical, and Social/Contextual domains, as well as six Protective factors that are rated as present or absent. In previous studies, the SAVRY has shown good predictive validity [13–16].

The predictive validity of the SAVRY Protective factors has yielded some positive findings [15,17], such as inversely predicting general reoffending [18], violence [17], and violent and general reoffending [19,20]. Some studies have shown mixed findings, such as predictive validity for only general reoffending [21], nonviolent reoffending [22], or only violent reoffending [14,23]. Further, a recent systematic review found that SAVRY Protective factors were not significantly related to violence or offending (k = 14 studies) [24]. These inconsistent results suggest that the SAVRY Protective factors may have limited predictive validity in some contexts and populations. As such, it may be necessary to include a more comprehensive measure of protective factors when assessing risk for violent behaviour in adolescents.

Beyond the need for further research on protective factors, there is a need for more sophisticated analyses [9], such as whether protective factors add incrementally to risk factors in the prediction of reoffending. A few studies on the SAVRY have investigated this, but findings are mixed. One study found incremental validity for SAVRY Protective factors for nonviolent reoffending only [25]. In another study, SAVRY Protective factors added incrementally to SAVRY dynamic risk factors (i.e., Individual/Clinical and Social/Contextual factors) in predicting violent reoffending [17]. In contrast, other studies found that SAVRY Protective scores do not add incrementally to SAVRY Risk total scores in the prediction of violent and nonviolent reoffending [14,20–22,26]. These findings may be due to the limited number of items on the SAVRY that assess protective factors. Further, the dichotomous response format may facilitate a loss of information (i.e., no option for a rating somewhere between present and absent).

Structured Assessment of Protective Factors for Violence Risk - Youth Version

To address gaps in the literature and in the assessment of protective factors in violence risk assessment, de Vries Robbé and colleagues developed the Structured Assessment of Protective Factors for Violence Risk - Youth Version (SAPROF-YV) [8]. This measure is designed for concurrent use with an adolescent risk assessment measure, such as the SAVRY, to provide a comprehensive assessment of violence risk. The SAPROF-YV follows an SPJ model and includes 16 protective factors with Resilience, Motivational, Relational, and External domains. Items in the Resilience domain include internal resilience and social skills. The Motivational domain is focused on the adolescent's motivation for active participation in their treatment. Items on the Relational domain concern interpersonal relationships that are prosocial, warm, and supportive. Finally, the External domain focuses on support from external sources, such as the adolescent's environment or circumstances. Each factor is rated as hardly present, present to some extent, or clearly present. All SAPROF-YV factors are considered dynamic, with the goal of bridging risk assessment with risk management by targeting adaptable protective factors during treatment.

Thus far, research on the SAPROF-YV's reliability and validity is lacking. Unpublished pilot studies from the SAPOF-YV manual [8] (*n* = 76 and 37) examining adolescent files from a forensic psychiatric clinic revealed convergent validity with the SAVRY Protective factors (*r*s = .63, .89) and discriminant validity with SAVRY Risk factors (*r*s = -.59, -.60). To our knowledge, only one other study has examined psychometric properties of the SAPROF-YV. A study examining adolescent probation files in Singapore reported good to excellent internal consistency [27], but did not report on other psychometric properties (e.g., convergent or discriminant validity) of the SAPROF-YV. To our knowledge, at the time of writing there were no other published studies that have examined the SAPROF-YV and outcomes of offending or aggression.

The Present Study

Our study is one of the first independent studies to assess the predictive validity of the SAPROF-YV. We used a retrospective follow-up study design to examine the relationship between SAPROF-YV protective factors and aggression in adolescents from an inpatient treatment centre and a probation office. First, we examined the SAPROF-YV's convergent and discriminant validity with the SAVRY Protective and Risk factors, respectively. Second, we examined the SAPROF-YV's predictive validity for the absence of aggression. Finally, we examined the incremental predictive validity of the SAPROF-YV above SAVRY Risk and Protective factors.

Methods

Sample

Data was collected at two sites in British Columbia, Canada, including at an adolescent inpatient treatment centre and at a provincial youth probation office. We chose these settings because risk assessments are routinely conducted in these types of settings. The treatment centre provides inpatient services for adolescents aged 12 to 18 years with significant psychiatric, emotional, or behavioural issues. Files from 2011 to 2015 were included from the treatment centre's internalizing and externalizing disorders programs. The internalizing program admits many adolescents each year, so we randomly selected files from this program for inclusion in the study. The externalizing program has fewer adolescents admitted, so we used consecutive admissions to maximize the number of usable files. In addition, a random sample of adolescent probation files from 2012 to 2014 was selected as part of a larger, ongoing study.

The total sample consisted of 69 male and female adolescents aged 13 to 18 years (M = 15.72, SD = 1.46). More than half of the sample were male (59.42%, n = 41). With respect to ethnicity, 55.07% (n = 38) of the sample were White, 24.64% (n = 17) were Indigenous, 8.70% (n = 6) were Asian, 5.80% (n = 4) were Hispanic, and 5.80% (n = 4) were Indian/Middle Eastern.

Of the total sample, 56.52% (n = 39) were from the treatment sample, and 43.48% (n = 30) were from the probation sample. Adolescents from the two sites did not differ significantly with respect to gender ($\chi^2(1) = 2.46$, $p = .12$) or age ($t(67) = .16$, $p = .18$). At the treatment centre, 26.09% (n = 18) of adolescents were from the externalizing disorders program, and 30.43% (n = 21) were from the internalizing disorders program. Adolescents from the two programs did not differ significantly with respect to gender ($\chi^2(1) = 5.75$, $p = .06$), age ($t(37) = .37$, $p = .72$), length of treatment ($t(37) = -1.01$, $p = .32$), or length of follow-up ($t(37) = -.03$, $p = .98$). Therefore, adolescents from the treatment centre were considered as part of one sample (i.e., treatment sample.)

The follow-up period for the treatment sample was dependent on the adolescent's duration of stay at the treatment centre, which ranged from 1.45 to 27.56 months (M = 5.05, SD = 3.79). The mean length of follow-up for the treatment sample was 2.63 months (SD = 1.14 months), as some adolescents were discharged before six months. A fixed follow-up period of six months was used for the probation sample. As

such, the two groups had significantly different lengths of follow-up ($t(67) = -16.09$, $p < .01$).

About half of the total sample had prior charges (49.28%, $n = 34$). Adolescents in the probation sample were significantly more likely than those in the treatment sample to have prior offences ($\chi^2(1) = 41.22$, $p < .01$).

Measures

Structured Assessment of Protective Factors for Violence Risk - Youth Version

As described earlier, the SAPROF-YV [8] is a 16-item SPJ measure of protective factors in adolescents with four subscales: Resilience, Motivational, Relational, and External. Each item is rated on the following scale: 0 (hardly present), 1 (present to some extent), or 2 (clearly present). Raters may include plus and minus signs to indicate that a rating is slightly higher or lower, respectively. Items are rated based on information during the past six months to predict violent behaviour for the subsequent six months.

After coding the SAPROF-YV and the risk tool concurrently, the rater assigns a summary protection rating from the SAPROF-YV and a summary risk rating that considers both the SAPROF-YV and the risk tool. Both of these ratings use the following ratings: low, low-moderate, moderate, moderate-high, and high. Total scores can be created by adding the scores on all the items or by domain.

As this is a new measure, there is a lack of literature on the reliability and validity of the SAPROF-YV. Preliminary research revealed excellent internal consistency (intraclass correlation coefficients [ICCs] of .67 to .97) [27]. The pilot version showed excellent internal consistency (ICC = .84, .91), as well as convergent validity with the SAVRY Protective factors ($rs = .63, .89$) and discriminant validity with SAVRY Risk factors ($rs = -.59, -.60$) [8].

Structured Assessment of Violence Risk in Youth

The SAVRY [2] is a risk assessment tool for adolescents aged 12 to 18 years. It includes Historical, Social/Contextual, and Individual/Clinical factors and 24 risk items that are rated as 0 (low), 1 (moderate), or 2 (high). The total risk score is calculated by adding the risk factors. High scores are indicative of increased risk factors. Total scores are not recommended for use in clinical assessments; however, they are typically used within research contexts. The rater assigns a summary risk rating for violence risk level (i.e., low, moderate, or high). The SAVRY also includes six protective factors rated as present or absent, which may be added for a total score.

The SAVRY has demonstrated sound reliability and validity, such as excellent interrater reliability (ICC = .86) [28] and large effect sizes for the prediction of violence in a meta-analysis [29].

Outcome

Aggression outcome variables were coded using the Short-Term Assessment of Risk and Treatability (START) Outcome Scale (SOS) [30], which is derived from the Overt Aggression Scale (OAS) [31]. Outcome coding included the frequency of verbal aggression (e.g., threats) and physical aggression against others (e.g., pushing, kicking). The SOS includes four levels of severity for each type of aggression. For instance, under physical aggression, a level 1 severity includes “makes threatening gestures, swings at people, grabs at clothing, throws objects dangerously” [30]. A level 4 severity of physical aggression is described as “attacks others, uses weapons, resulting in severe physical injury (e.g., fracture, loss of teeth or consciousness, lacerations, internal injury).” The SOS has shown adequate interrater reliability for inpatient populations (ICC = .70) [32].

For our study, severity levels of 1 and 2 were collapsed to form a minor aggression category, and severity levels of 3 and 4 were collapsed to form a major aggression category for each of type of aggression. Some studies have collapsed all severity levels to look at any aggression [33]; however, scholars have cautioned against collapsing violent behaviour across severity [4]. It has been suggested that

protective factors may have different effects across severity level [9]. Out study included a severity of level 2 in the minor category to allow for a more stringent classification of severe or major aggression.

Procedure

Ethics approval was obtained through the Office of Research Ethics at Simon Fraser University and through the research sites (i.e., treatment facility and probation).

The first author (A.K. Christiansen) completed the SAVRY and SAPROF-YV coding. She attended a day-long SAVRY training workshop. SAPROF-YV training included carefully reading the manual and completing two independent practice cases for each measure, which were compared to gold standard ratings to ensure that adequate interrater reliability (i.e., within five points on the total scores) was achieved before data collection.) In addition, the first author had previous experience delivering a day-long training on the SAPROF-YV that was developed by the SAPROF-YV authors.

Treatment Sample

At the treatment centre, files were selected if they met the following inclusion criteria:

1. were from an inpatient program,
2. the length of stay was 60 days or longer,
3. had a social and family history report, and
4. contained a psychological report.

The SAPROF-YV and SAVRY were coded using file information that was collected within the first few weeks after admission, including psychological assessment reports, and social and family history reports. The first author was kept blind to the outcomes by reviewing file information near admission/intake only.

During outcome coding, the file numbers were randomly reassigned new identification numbers. The SOS was coded by the first author (A.K. Christiansen) based on information after the psychological report interview date for up to six months. The SOS was coded using progress notes recorded by treatment staff (e.g., nurses and clinicians).

Probation Sample

A sample of probation files was randomly selected as part of a larger study's data collection. Files were included if they had a presentence report completed within the first six months of the probation order.

The first author (A.K. Christiansen) coded the SAPROF-YV and SAVRY using presentence reports and contact logs recorded by the adolescent's probation officer for the first six months postintake. She was blind to the outcomes by reviewing file information during this six-month period only. One trained research assistant coded the SOS by independently reviewing official records and contact logs during a fixed follow-up period of six months.

Analyses

Convergent and Discriminant Validity

Convergent and discriminant validity analyses were conducted with the total sample as the two samples did not show significantly different mean total scores on the SAPROF-YV and SAVRY. SAPROF-YV and SAVRY total scores were normally distributed based on visual examination of the quantile–quantile plots and histograms. Pearson bivariate correlations were conducted. Positive associations between the SAPROF-YV and SAVRY Protective factors (e.g., $r \geq .50$) [34] would suggest convergent validity, whereas negative associations between the SAPROF-YV and SAVRY Risk factors would indicate discriminant validity.

Predictive Validity

Predictive validity analyses were conducted by sample due to the significant difference in follow-up length. The area under the curve (AUC) value from receiver operating characteristic (ROC) analyses [35] was used to determine the accuracy of the SAPROF-YV in discriminating between adolescents who engaged in aggression and those who did not. AUC values of .556, .639, and .714 are indicative of small, moderate, and large effect sizes, respectively [36].

Table 1: Descriptive statistics for SAPROF-YV and SAVRY scores

Measure	Total sample (*N* = 69) *M (SD)*	Treatment sample (*n* = 39) *M (SD)*	Probation sample (*n* = 30) *M (SD)*	*t(df)*	*p*
SAPROF-YV					
Total	13.51 (5.83)	13.56 (5.23)	13.43 (6.62)	$t(67) = .09$	.93
Resilience	2.43 (2.21)	2.54 (1.93)	2.30 (2.56)	$t(67) = .44$	.66
Motivational	5.05 (3.14)	5.45 (3.15)	3.78 (2.94)	$t(67) = 1.41$	.17
Relational	1.88 (1.32)	1.87 (1.28)	1.90 (1.40)	$t(67) = .09$	.93
External	4.32 (1.05)	3.97 (.87)	4.77 (1.10)	$t(67) = -3.33$	< .01
SAVRY					
Risk total	17.00 (8.45)	16.54 (8.43)	17.67 (8.60)	$t(67) = -.53$	.60
Protective	1.80 (1.63)	1.62 (1.35)	2.03 (1.94)	$t(67) = -1.06$	.30
Historical	6.18 (4.09)	5.97 (4.23)	6.46 (3.95)	$t(67) = -.48$	.63
Social/Contextual	4.04 (1.88)	4.08 (1.75)	4.00 (2.07)	$t(67) = .17$	.87
Individual/Clinical	6.78 (4.36)	6.49 (4.58)	7.27 (4.11)	$t(67) = -.64$	.53

Table 2: Base rates of aggression

Aggression	Total sample (*N* = 69) % (*n*)	Treatment sample (*n* = 39) % (*n*)	Probation sample (*n* = 30) % (*n*)	χ^2(df)	*p*
Verbal					
Minor	49.27 (34)	71.79 (28)	20.00 (6)	$\chi^2(1) = 18.20$	< .01
Major	20.29 (14)	33.33 (13)	3.33 (1)	$\chi^2(1) = 9.44$	< .01
Physical					
Minor	17.39 (12)	28.21 (11)	3.33 (1)	$\chi^2(1) = 7.30$	.01
Major	20.29 (14)	28.21 (11)	10.00 (3)	$\chi^2(1) = 3.48$	.06

Incremental Validity

Hierarchical logistic regression analyses were conducted to examine the incremental predictive validity of SAPROF-YV total scores above SAVRY Risk total scores, as well as above SAVRY Protective scores [37]. Block 1 included the SAVRY Risk or Protective total score, and block 2 included the SAPROF-YV total score. These analyses used the total sample. Sample site was entered as a covariate to account for differences in follow-up periods.

Results

Descriptive Statistics

Means and standard deviations for SAPROF-YV and SAVRY scores are presented in Table 1. For the total sample, SAPROF-YV total scores ranged from 3 to 27 (M = 13.51, SD = 5.83). SAVRY Protective scores ranged from 0 to 6 (M = 1.80, SD = 1.63). Adolescents from the two samples did not have significantly different SAPROF-YV total scores ($t(67)$ =.09, p = .93),

Table 3: Receiver operating characteristic (ROC) analyses for verbal aggression

	Treatment sample				Probation sample			
	Minor		Major		Minor		Major	
Measure	AUC (*SE*)	95% CI	AUC (*SE*)	95% CI	AUC (*SE*)	95% CI	AUC (*SE*)	95% CI
SAVRY								
Risk total	.91*** (.05)	.81, 1.00	.85*** (.06)	.73, .97	.73 (.12)	.48, .97	—	—
Risk summary	.84** (.06)	.72, .96	.82** (.08)	.67, .97	.76 (.10)	.56, .95	—	—
Protective total	.73* (.09)	.55, .91	.66 (.09)	.49, .83	.46 (.10)	.26, .66	—	—
SAPROF-YV								
Total	.82** (.08)	.68, .97	.69 (.08)	.53, .86	.65 (.10)	.45, .86	—	—
Protection summary	.82** (.08)	.65, .98	.68 (.08)	.52, .85	.67 (.10)	.48, .87	—	—
Risk summary	.80** (.07)	.67, .94	.68 (.10)	.49, .87	.71 (.11)	.51, .92	—	—

Note. *p < .05, **p < .01, ***p < .001. AUC = area under the curve; *SE* = standard error; 95% CI = 95% confidence interval. AUC values for major verbal aggression are not presented (—) for the probation sample due to a low base rate (i.e., less than two individuals, or less than 10%).

Table 4: Receiver operating characteristic (ROC) analyses for physical aggression

	Treatment sample						Probation sample	
	Minor		Major				Minor	Major
Measure	AUC (*SE*)	95% CI	AUC (*SE*)	95% CI	AUC (*SE*)	95% CI	AUC (*SE*)	95% CI
SAVRY								
Risk total	.66 (.10)	.47, .85	.77** (.08)	.63, .92	—	—	.70 (.16)	.39, 1.00
Risk summary	.66 (.11)	.46, .87	.76* (.09)	.58, .93	—	—	.51 (.18)	.17, .86
Protective total	.66 (.09)	.48, .85	.64 (.09)	.47, .82	—	—	.56 (.20)	.17, .94
SAPROF-YV								
Total	.64 (.09)	.47, .82	.68 (.08)	.51, .84	—	—	.60 (.18)	.24, .96
Protection summary	.63 (.09)	.45, .80	.68 (.09)	.52, .85	—	—	.65 (.19)	.28, 1.00
Risk summary	.65 (.10)	.46, .85	.64 (.10)	.45, .84	—	—	.55 (.20)	.14, .96

Note. *p < .05, **p < .01, ***p < .001. AUC = area under the curve; *SE* = standard error; 95% CI = 95% confidence interval. AUC values for minor physical aggression are not presented (—) ffor the probation sample due to a low bases rate (i.e., less than two individuals, or less than 10%).

SAVRY Risk total scores (t(67) = -.53, p = .60), or SAVRY Protective scores (t(67) = -1.06, p = .30).

The two samples differed significantly for most of the aggression variables, excluding major physical aggression (see Table 2). In the treatment sample, verbal aggression was most frequent. Overall, incidents of aggression were less frequent in the probation sample than in the treatment sample. In the probation sample, base rates of major verbal aggression and minor physical aggression were less than 10%. These variables were excluded from subsequent analyses for the probation sample.

Convergent and Discriminant Validity Between the SAPROF-YV and the SAVRY

As the patterns of correlations were similar across samples, the results are presented for the total sample. A large positive correlation

Table 5: Hierarchical logistic regression analyses for the incremental validity of the SAPROF-YV total score above SAVRY Risk total scores

	b	*SE*	Wald	*df*	*p*	*OR*	95% CI
Minor verbal							
SAVRY Risk	.21	.06	12.09	1	< .01	1.24	1.10, 1.39
Sample	4.03	1.04	15.08	1	< .01	56.22	7.36, 429.55
Model	X^2 = 39.21, p < .01, Cox & Snell R^2 = .45, Nagelkerke R^2 = .60						
SAPROF-YV	-.05	.10	.23	1	.63	.95	.79, 1.16
Model	X^2 = 39.44, p < .01, Cox & Snell R^2 = .45, Nagelkerke R^2 = .60						
Major verbal							
SAVRY Risk	.20	.06	10.30	1	< .01	1.22	1.08, 1.37
Sample	3.54	1.25	8.08	1	< .01	34.61	3.01, 398.45
Model	X2 = 26.58, p < .01, Cox & Snell R^2 = .33, Nagelkerke R^2 = .52						
SAPROF-YV	.06	.12	.21	1	.65	1.06	.83, 1.34
Model	X^2 = 26.79, p < .01, Cox & Snell R^2 = .33, Nagelkerke R^2 = .52						
Minor physical							
SAVRY Risk	.07	.04	2.88	1	.09	1.08	.99, 1.17
Sample	2.50	1.10	5.14	1	.02	12.15	1.40, 05.11
Model	X^2 = 10.71, p = .01, Cox & Snell R^2 = .15 Nagelkerke R^2 = .24						
SAPROF-YV	-.06	.10	.33	1	.57	.95	.78, 1.15
Model	X^2 = 11.04, p = .01, Cox & Snell R^2 = .15, Nagelkerke R^2 = .25						
Major physical							
SAVRY Risk	.10	.04	6.09	1	.01	1.11	1.02, 1.21
Sample	1.40	.76	3.41	1	.07	4.04	.92, 17.81
Model	X^2 = 10.04, p = .01, Cox & Snell R^2 = .14, Nagelkerke R^2 = .22						
SAPROF-YV	-.02	.10	.03	1	.87	.99	.82, 1.19
Model	X^2 = 10.07, p = .02, Cox & Snell R^2 = .14, Nagelkerke R^2 = .22						

Note. *b* = unstandardized regression coefficient; *SE* = standard error; *OR* = odds ratio; 95% CI = 95% confidence interval.

was found between the SAPROF-YV total score and the SAVRY Protective score (r = .85, p < .01). A large negative correlation was found between the SAPROF-YV total score and the SAVRY Risk total score (r = -.76, p < .01).

Predictive Validity

AUC values with 95% confidence intervals are presented in Tables 3 and 4.

For the treatment sample, SAPROF-YV total scores, SAPROF-YV summary ratings, and SAVRY Protective scores significantly predicted minor verbal aggression with large effect sizes (AUC > .71) [36]. Although these measures also predicted physical aggression with moderate AUC scores, these values did not reach significance. SAVRY Risk total scores and summary ratings significantly predicted verbal aggression and major physical aggression with large AUC scores.

In the probation sample, no AUC values reached significance. SAPROF-YV total scores and protection summary ratings had moderate AUC scores for predicting minor

Table 6: Hierarchical logistic regression analyses for the incremental validity of the SAPROF-YV Total score above SAVRY Protective total scores

	b	*SE*	Wald	*df*	*p*	*OR*	95% CI
Minor verbal							
SAVRY Protective	-.38	.21	3.27	1	.07	.69	.46, 1.03
Sample	2.36	.61	15.16	1	< .001	10.56	3.22, 34.60
Model	X^2 = 22.93, p < .001, Cox & Snell R^2 = .28, Nagelkerke R^2 = .38						
SAPROF-YV	-.39	.13	8.96	1	< .01	.67	.52, .87
Model	X^2 = 35.07, p < .001, Cox & Snell R^2 = .40, Nagelkerke R^2 = .53						
Major verbal							
SAVRY Protective	-.52	.29	3.17	1	.08	.60	.34, 1.05
Sample	2.72	1.09	6.21	1	.01	5.14	1.79, 128.20
Model	X^2 = 15.02, p < .01, Cox & Snell R^2 = .20, Nagelkerke R^2 = .31						
SAPROF-YV	-.16	.11	2.06	1	.15	.85	.69, 1.06
Model	X^2 = 17.17, p < .01, Cox & Snell R^2 = .22, Nagelkerke R^2 = .35						
Minor physical							
SAVRY Protective	-.47	.30	2.48	1	.12	.63	.35, 1.12
Sample	2.44	1.09	5.01	1	.03	11.49	1.35, 97.48
Model	X2 = 11.55, p < .01. Cox & Snell R^2 = .15, Nagelkerke R2 = .26						
SAPROF-YV	-.05	.11	.22	1	.64	.95	.76, 1.18
Model	X^2 = 11.77, p = .01, Cox & Snell R^2 = .16, Nagelkerke R^2 = .26						
Major physical							
SAVRY Protective	-.28	.24	1.40	1	.24	.76	.48, 1.20
Sample	1.22	.71	2.92	1	.09	3.38	.84, 13.64
Model	X^2 = 5.27, p = .07, Cox & Snell R^2 = .07, Nagelkerke R2 = .12						
SAPROF-YV	-.17	.11	2.48	1	.12	.85	.69, 1.04
Model	X^2 = 7.83, p = .05, Cox & Snell R^2 =.11, Nagelkerke R^2 = .17						

Note. *b* = unstandardized regression coefficient; *SE* = standard error; *OR* = odds ratio; 95% CI = 95% confidence interval.

verbal aggression and major physical aggression. SAVRY Protective scores had chance-level AUC scores. In contrast, SAVRY Risk total scores showed a large AUC score for minor verbal aggression and a moderate AUC score for major physical aggression.

Incremental Predictive Validity Above SAVRY Risk or Protective Factors

SAPROF-YV total scores did not significantly predict aggression beyond SAVRY Risk total scores (see Table 5). The SAPROF-YV total score only significantly predicted minor verbal aggression beyond the SAVRY Protective scores. SAVRY Protective scores did not predict aggression (see Table 6).

Discussion

As the SAPROF-YV is a relatively new measure, research needs to evaluate its psychometric properties [8]. Our research is one of the first studies to examine the validity of the SAPROF-YV and the first to examine the SAPROV-YV's psychometric properties in a Western Canadian sample. Moreover, our

study included adolescents from both an inpatient treatment centre and probation.

Overall, the results supported the convergent and discriminant validity of the SAPROF-YV. Consistent with the pilot studies [8], the SAPROF-YV had a large positive correlation with SAVRY Protective factors (i.e., $r > .50$) [34] and a large inverse correlation with SAVRY Risk factors. While pilot research focused on adolescent forensic samples [8], our results suggest that convergent and discriminant validity with the SAVRY may be generalizable to both forensic and psychiatric samples of adolescents.

The SAPROF-YV total score and protection summary risk rating were significant predictors of (the absence of) minor verbal aggression in the treatment sample, which was the most common and frequent form of aggression. Although past research has focused on physical aggression, or has collapsed verbal and physical aggression [38], verbal aggression may be important to examine because it is common in inpatient settings. Few adolescent risk assessment studies have been conducted with psychiatric samples, but our study found that base rates of some forms of aggression were fairly high (e.g., greater than SOS rates in adult inpatient samples) [33], suggesting that it may be important to regularly assess risk in this population. Further, instances of verbal aggressions (e.g., threats to others) might trigger or escalate to physical violence. While the SAPROF-YV did not significantly predict physical aggression, effect sizes were within the moderate range.

Although many researchers and practitioners consider the assessment of protective factors to be important, there is uncertainty about whether protective factors add to predictions beyond risk factors. In our study, SAPROF-YV total scores did not predict aggression beyond SAVRY Risk factors. Previous research has shown inconsistent findings about the incremental validity of protective factors over risk factors [22,25,26]. These findings suggest that the variance captured by protective factors may be explained by risk factors. In addition, predictive validity effect sizes were generally higher for the SAVRY Risk factors compared with the SAPROF-YV protective factors. Thus, risk factors may appear more useful for risk prediction, but it is still unknown whether protective factors have added usefulness for violence prevention and risk management.

One of the primary rationales for the development of the SAPROF-YV was that existing measures of protective factors, such as on the SAVRY, are brief. Further, brief measures of protective factors (i.e., the SAVRY) tend to capture mainly deficits in protective factors (i.e., low scores), as opposed to the presence of protective factors [20]. In our study, the SAPROF-YV showed incremental predictive validity over SAVRY Protective factors for minor verbal aggression, suggesting that it contributed more information than is captured by the SAVRY Protective factors alone. However, the SAPROF-YV did not outperform the SAVRY Protective factors in the prediction of physical aggression, despite being a lengthier tool (i.e., 16 ordinal items on SAPROF-YV versus six dichotomous items on the SAVRY).

Implications and Future Directions

As the SAPROF-YV is a relatively new tool, there is limited research on its psychometric properties. There are two main implications from our findings. First, research should continue to examine the predictive validity of this tool with adolescents, particularly for physical aggression. Future research should also examine the specific effects of individual protective factors. The SAPROF-YV manual acknowledges that some factors have limited empirical support, such as Social Competence and Court Order [8], and these factors require further validation to support their inclusion in the tool. Additionally, different factors may have greater predictive validity in different subsamples of adolescents (e.g., by gender, by forensic versus mental health settings). For instance, Prosocial Involvement on the SAVRY has been associated with future violence in girls but not in boys [39]. In our study,

gender differences were not examined due to the small sample size.

Second, research should examine how the implementation of the SAPROF-YV in real-world settings impacts treatment and management decisions. For instance, implementing the SAVRY has led to an increased consideration of protective factors in determining supervision levels for adolescent offenders, as well as a greater match between needs, protective factors, and service recommendations from youth justice professionals [40]. In clinical settings, protective factors may be valuable targets for interventions [41], such as by leveraging or improving protective factors that are present or lacking, respectively. However, there is a lack of literature examining strength-based intervention planning, so it requires further examination [41].

Limitations

The main limitation of our study is the small sample size and low power. Although the total sample size is comparable to some studies [42,43] and expands on pilot research on the SAPROF-YV (e.g., n = 37) [8], it was nevertheless smaller than ideal. For instance, the SAPROF-YV had moderate effect sizes for predicting physical aggression, which did not reach significance. This may be due to a lack of power. Future research should include larger samples of adolescents to see if the SAPROF-YV may be a significant predictor of physical aggression.

In addition, the use of inpatient and community samples resulted in differences in the quality of information used for outcome coding. Adolescents in the treatment sample were under extensive supervision by staff, whereas the adolescents in the probation sample had relatively infrequent observations from their probation officers (e.g., weekly or biweekly), which limited opportunities to observe aggression. It is also likely that official records did not detect instances of minor aggression that may have been observed by staff in an inpatient setting. Therefore, the low base rates within the probation sample may be attributed to the quality of the data sources rather than true differences in rates of these behaviours across samples.

The retrospective study design is another limitation. However, file information was comprehensive, and cases were excluded if the information was insufficient for coding. Moreover, this retrospective design was consistent with most studies on risk assessment [44,45].

Conclusion

Our results provide preliminary support for the psychometric properties of the SAPROF-YV. Both the SAPROF-YV and SAVRY were predictive of verbal aggression. The SAPROF-YV demonstrated incremental predictive validity for the absence of minor verbal aggression over SAVRY Protective factors. However, the SAPROF-YV did not show incremental predictive validity for other aggression variables or over the SAVRY Risk factors. These results suggest that further validation studies are needed with large, adolescent offender samples. More generally, advancing research on protective factors and assessment of strengths may be beneficial in decreasing adolescent offending.

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Conflict of Interest: None

References

1. Viljoen JL, Gray AL, Barone C. Assessing risk for violence and offending in adolescents. In: Jackson R, Roesch R, editors. *Learning forensic assessment: Research and practice 2nd edition.* New York, NY: Routlege; 2016. p. 357-388.

2. Borum R, Bartel P, Forth A. *Manual for the Structured Assessment for Violence Risk in Youth (SAVRY).* Odessa, FL: Psychological Assessment Resources; 2006.

3. Hart SD. Preventing violence: The role of risk assessment and management. In: Baldry AC, Winkel FW, editors. *Intimate partner violence prevention and intervention: The risk assessment and management approach.*

Hauppauge, NY: Nova Science Publishers; 2008. p. 7-18.

4. Rogers R. The uncritical acceptance of risk assessment in forensic practice. *Law and Human Behavior.* 2000;24(5):595-605. https://doi.org/10.1023/A:1005575113507.

5. de Vogel V, De Ruiter C, Bouman Y, de Vries Robbé M. *SAPROF. Guidelines for the assessment of protective factors for violence risk (2nd ed.).* Utrecht, The Netherlands: Van der Hoeven Kliniek; 2012.

6. de Vries Robbé M, de Vogel V, Wever EC, Douglas KS, Nijman HI. Risk and protective factors for inpatient aggression. *Criminal Justice and Behavior.* 2016;43(10):1364-1385. https://doi.org/10.1177/0093854816637889.

7. Dubow EF, Huesmann LR, Boxer P, Smith C. Childhood and adolescent risk and protective factors for violence in adulthood. *Journal of Criminal Justice.* 2016;45(C):26-31. https://doi.org/10.1016/j.jcrimjus.2016.02.005.

8. de Vries Robbé M, Geers MCK, Stapel M, Hilterman ELB, Vogel V. *SAPROF-YV. Structured Assessment of Protective Factors for violence risk - Youth Version (SAPROF-YV).* Utrecht, The Netherlands: Van der Hoeven Kliniek; 2015.

9. Lösel F, Farrington DP. Direct protective and buffering protective factors in the development of youth violence. *American Journal of Preventive Medicine.* 2012;43(2, Suppl 1):S8-S23. https://doi.org/10.1016/j.amepre.2012.04.029.

10. de Vries Robbé M. *Protective factors: Validation of the Structured Assessment of Protective Factors for violence risk in forensic psychiatry* [dissertation]. Utrecht: Van der Hoeven Kliniek, The Netherlands; 2014.

11. de Vries Robbé M, de Vogel V. Protective factors for violence risk: Bringing balance to risk assessment and management. In: Logan C, Johnstone L, editors. *Managing Clinical Risk*. New York, NY: Routledge; 2012. p. 293-310.

12. Seligman MEP. Positive psychology, positive prevention, and positive therapy. In: Snyder CR, Lopez SJ, editors. *Handbook of Positive Psychology*. New York, NY: Oxford University Press 2002. p. 3-9.

13. Borum R, Lodewijks H, Bartel PA, Forth AE. Structured Assessment of Violence Risk in Youth (SAVRY). In: Douglas K, Otto R, editors. *Handbook of Violence Risk Assessment*. New York, NY: Routledge; 2010. p. 63-80.

14. Hilterman ELB, Nicholls TL, van Nieuwenhuizen C. Predictive validity of the risk assessments in juvenile offenders: Comparing the SAVRY, PCL:YV, and YLS/CMI with unstructured clinical assessments. *Assessment.* 2014;21(3):324-339. https://doi.org/10.1177/1073191113498113.

15. Lodewijks HB, Doreleijers TH, de Ruiter C, Borum R. Predictive validity of the Structured Assessment of Violence Risk in Youth (SAVRY) during residential treatment. *International Journal of Law and Psychiatry*. 2008;31(3):263-271. https://doi.org/10.1016/j.ijlp.2008.04.009.

16. Olver ME, Stockdale KC, Wormith JS. Risk assessment with young offenders: A meta-analysis of three assessment measures. *Criminal Justice and Behavior.* 2009;36(4):329-353. https://doi.org/10.1177/0093854809331457.

17. Lodewijks HPB, de Ruiter C, Doreleijers TAH. The impact of protective factors in desistance from violent reoffending: A study in three samples of adolescent offenders. *Journal of Interpersonal Violence.* 2010;25(3):568-587. https://doi.org/10.1177/0886260509334403.

18. Shepherd SM, Luebbers S, Ogloff JRP, Fullam R, Dolan M. The predictive validity of risk assessment approaches for young Australian offenders. *Psychiatry, Psychology and Law.* 2014;21(5):801-817. https://doi.org/10.1080/13218719.2014.904262.

19. McLachlan K, Gray AL, Roesch R, Douglas KS, Viljoen JL. An evaluation of the predictive validity of the SAVRY and YLS/CMI in justice-involved youth with fetal alcohol spectrum disorder. *Psychological Assessment.* 2018;30(12):1640-1651. https://doi.org/10.1037/pas0000612.

20. Viljoen JL, Bhanwer AK, Shaffer CS, Douglas KS. Assessing protective factors for adolescent offending: A conceptually informed examination of the SAVRY and YLS/CMI. *Assessment.* [Advanced online publication.]

2018;27(5):959-975. https://doi.org/10.1177/1073191118768435.

21. Chu CM, Goh ML, Chong D. The predictive validity of SAVRY ratings for assessing youth offenders in Singapore: A comparison with YLS/CMI ratings. *Criminal Justice and Behavior.* 2016;43(6):793-810. https://doi.org/10.1177/0093854815616842.

22. Penney SR, Lee Z, Moretti MM. Gender differences in risk factors for violence: An examination of the predictive validity of the Structured Assessment of Violence Risk in Youth. *Aggressive Behavior.* 2010;36(6), 390-404. https://doi.org/10.1002/ab.20352.

23. Zhou J, Witt K, Cao X, Chen C, Wang X. Predicting reoffending using the Structured Assessment of Violence Risk in Youth (SAVRY): A 5-year follow-up study of male juvenile offenders in Hunan Province, China. *PLoS ONE.* 2017;12(1):e0169251. https://doi.org/10.1371/journal.pone.0169251.

24. Dickens GL, O'Shea LE. Protective factors in risk assessment schemes for adolescents in mental health and criminal justice populations: A systematic review and meta-analysis of their predictive validity. *Adolescent Res Rev.* 2018;3(1):95-112. https://doi.org/10.1007/s40894-017-0062-3.

25. Dolan MC, Rennie CE. The Structured Assessment of Violence Risk in Youth as a predictor of recidivism in a United Kingdom cohort of adolescent offenders with conduct disorder. *Psychological Assessment.* 2008;20(1):35-46. https://doi.org/10.1037/1040-3590.20.1.35.

26. Schmidt F, Campbell MA, Houlding C. Comparative analyses of the YLS/CMI, SAVRY, and PCL:YV in adolescent offenders: A 10-year follow-up into adulthood. *Youth Violence and Juvenile Justice.* 2011;9(1):23-42. https://doi.org/10.1177/1541204010371793.

27. Li D, Chu CM, Xu X, Zeng G, Ruby K. Risk and protective factors for probation success among youth offenders in Singapore. *Youth Violence and Juvenile Justice.* 2019;17(2):194-213. https://doi.org/10.1177/1541204018778887.

28. Vincent GM, Guy LS, Fusco SL, Gershenson BG. Field reliability of the SAVRY with juvenile probation officers: Implications for training. *Law and Human Behavior.* 2012;36(3):225-236. https://doi.org/10.1037/h0093974.

29. Singh JP, Grann M, Fazel S. A comparative study of violence risk assessment tools: A systematic review and metaregression analysis of 68 studies involving 25,980 participants. *Clinical Psychology Review*. 2011;31(3):499-513. https://doi.org/10.1016/j.cpr.2010.11.009.

30. Nicholls TL, Gagnon N, Crocker AG, Brink J, Desmarais S, Webster C. *START Outcomes Scale (SOS).* Vancouver, Canada: Mental Health & Addiction Services; 2007.

31. Yudofsky SC, Silver JM, Jackson W, Endicott J, Williams D. The Overt Aggression Scale for the objective rating of verbal and physical aggression. *The American Journal of Psychiatry.* 1986;143(1):35-39. https://doi.org/10.1176/ajp.143.1.35.

32. Braithwaite E, Charette Y, Crocker AG, Reyes A. The predictive validity of clinical ratings of the Short-Term Assessment of Risk and Treatability (START). *International Journal of Forensic Mental Health.* 2010;9(4):271-281. https://doi.org/10.1080/14999013.2010.534378.

33. Desmarais SL, Nicholls TL, Wilson CM, Brink J. Using dynamic risk and protective factors to predict inpatient aggression: Reliability and validity of START assessments. *Psychological Assessment.* 2012;24(3):685-700. https://doi.org/10.1037/a0026668.

34. Cohen J. *Statistical power analysis for the behavioral sciences (2nd ed.).* Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.

35. Hanley JA, McNeil BJ. The meaning and use of the area under a receiver operating characteristic (ROC) curve. *Radiology*. 1982;143(1):29-36. https://doi.org/10.1148/radiology.143.1.7063747.

36. Rice ME, Harris GT. Comparing effect sizes in follow-up studies: ROC Area, Cohen's d, and r. *Law and Human Behavior.* 2005;29(5):615-620. https://doi.org/10.1007/s10979-005-6832-7.

37. Hunsley J, Meyer GJ. The incremental validity of psychological testing and assessment: Conceptual, methodological, and statistical issues. *Psychological Assessment.* 2003;15(4):446-455. https://doi.org/10.1037/1040-3590.15.4.446.

38. Nagin D, Tremblay RE. Trajectories of boys' physical aggression, opposition, and hyperactivity on the path to physically violent and nonviolent juvenile delinquency. *Child Development.* 1999;70(5):1181-1196. https://doi.org/10.1111/1467-8624.00086.

39. Sijtsema JJ, Kretschmer T, van Os T. The Structured Assessment of Violence Risk in Youth in a large community sample of young adult males and females: The TRAILS study. *Psychological Assessment.* 2015;27(2):669-677. https://doi.org/10.1037/a0038520.

40. Vincent GM, Paiva-Salisbury ML, Cook NE, Guy LS, Perrault RT. Impact of risk/needs assessment on juvenile probation officers' decision making: Importance of implementation. *Psychology, Public Policy, and Law.* 2012;18(4):549-576. https://doi.org/10.1037/a0027186.

41. Singh JP, Desmarais SL, Sellers BG, Hylton T, Tirotti M, Van Dorn RA. From risk assessment to risk management: Matching interventions to adolescent offenders' strengths and vulnerabilities. *Children and Youth Services Review.* 2014;47(Part 1):1-9. https://doi.org/10.1016/j.childyouth.2013.09.015.

42. Klein V, Rettenberger M, Yoon D, Köhler N, Briken P. Protective factors and recidivism in accused juveniles who sexually offended. *Sexual Abuse.* 2015;27(1):71-90. https://doi.org/10.1177/1079063214554958.

43. Lodewijks HPB, de Ruiter C, Doreleijers TAH. Gender differences in violent outcome and risk assessment in adolescent offenders after residential treatment. *International Journal of Forensic Mental Health.* 2008;7(2):133-146. https://doi.org/10.1080/14999013.2008.9914410.

44. Campbell MA, French S, Gendreau P. The prediction of violence in adult offenders: A meta-analytic comparison of instruments and methods of assessment. *Criminal Justice and Behavior.* 2009;36(6):567-590. https://doi.org/10.1177/0093854809333610.

45. Yang M, Wong SCP, Coid J. The efficacy of violence prediction: A meta-analytic comparison of nine risk assessment tools. *Psychological Bulletin.* 2010;136(5):740-767. https://doi.org/10.1037/a0020473.

Corresponding author
Dr. Jodi L. Viljoen, Department of Psychology, Simon Fraser University, Burnaby, BC V5A 1S6 Canada - email: jviljoen@sfu.ca

ORIGINAL ARTICLE

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The Impact of the Illusory Truth Effect and Location of Testimony in Juror Deliberations

Alexandrea Johnston,[1] Daniel Ambrosini,[2] Bruno Losier[2,3]

[1] Munk School of Global Affairs and Public Policy, University of Toronto, Toronto, Canada; [2] Department of Psychiatry and Behavioural Neurosciences, McMaster University, Hamilton, Canada; [3] Forensic Psychiatry Program, St. Joseph's Healthcare Hamilton, Hamilton, Canada

The illusory truth effect (ITE) is the tendency to believe false information as being accurate after it has been presented repeatedly over time. ITE has been shown to hold true in many different contexts; however, there have been no studies that examine the influence of ITE in jurors' deliberation. Given the importance of weighing legally relevant facts in the decision-making process, and the potential influence of ITE, this study examined whether the repetition of key evidence in testimony matters in this context. This study also examined whether critical information would be influenced by the location of ITE. In that context, jurors may process critical information differently when introducing ITE early (i.e., primacy effect) or later (i.e., recency effect) in the vignette of a murder case. To examine this effect, 100 participants were recruited and asked to read a vignette where pertinent evidence related to a murder was strategically repeated throughout the case narrative. Participants were assigned to one of four groups: control; ITE throughout vignette; ITE at the beginning of vignette; and ITE at the end of vignette. After reading the vignette, participants were asked to complete a short questionnaire and provide a final decision about various aspects of the case. Results revealed that repetition of pertinent evidence matters. The placement of evidence also has the potential to influence jurors' perceptions of certain case relevant details. These findings suggest that within a sensitive legal context, such as jurors weighing evidence of an accused's culpability, ITE could alter one's perception of the facts.

Keywords: *illusory truth effect, ITE, testimony, juror deliberations, primacy effect, recency effect*

In recent years, trial lawyers have adopted the use of psychological principles and processes in the hope of better understanding and influencing the jury deliberation process [1]. Although it is difficult to know the details about real juror deliberations, mock juries allow us to understand how jurors make decisions and possible techniques to persuade them. Studies have shown that a lawyer's language, appearance, and presentation of evidence in court can unconsciously persuade jurors' perception of a case [1]. These findings have been used by jury consulting companies to strategically plan high-profile trials that can assist in persuading jurors.

Furthermore, when jurors assemble to deliberate, a normative social influence, defined as the "influence to conform with the positive expectations of another," has been shown to impact jury deliberation and a strong persuasion effect on decision-making has been documented [2].

Outside the context of jury deliberation, individuals' decision-making has been shown to

be influenced by a persuasive phenomenon called the illusory truth effect (ITE), which was first reported in 1977 [3]. This phenomenon asserts that even inaccurate information, written or verbal, can become credible to the audience if the information is repeated enough [4]. Although ITE has been shown in many different contexts, in high-stakes situations, such as jurors' deliberations, it remains unexplored.

What is it about ITE that turns the implausible into plausible?

ITE is believed to be driven by "processing fluency," a psychological phenomenon that underscores the ease in which individuals comprehend statements. As repetition makes statements easier to process, individuals begin to believe the statements are more likely to be true and therefore assign it a higher salient value [5]. Gigerenzer and Gaissmaier [6] showed the importance of salience in this context, specifically that when one option is recognized faster than another, it is given a higher value in the decision-making process. Hence, in this framework, repeating statements will increase the ease of processing and understanding of information that has the added benefit of giving the statement more credibility than may be justified [5]. Moreover, Unkelback & Rom [7] purported ITE to be a robust phenomenon with lasting impacts ranging minutes, weeks, and months. DiFonzo and colleagues [8] used a set of clever experiments to clearly show that plausible statements of unknown truth, which were repeated to naive participants, were rated as more likely to be true than nonrepeated statements. Thus, the nature, source, or type of information is irrelevant in this perspective, which in turn is critically important when considering that ITE has been demonstrated across trivia, opinion, and product written statements [9]. Therefore, enhanced processing fluency is experienced as a conflicting comparison standard and, in turn, the experienced conflict informs the truth judgment [10]. Consequently, evidence-based literature appears to support that increased exposure to information will lead to truth-rating inflation, thus influencing the statement's perceived credibility [11].

Interest in the underlying psychological mechanisms of decision-making, including those of jurors, has received increased interest over the past decade [12]. Without question, jurors are tasked with a civic responsibility of making difficult decisions in situations that can have serious implications for others. Therefore, it is imperative to have a clearer appreciation of the factors, including cognitive processes that impact their decision-making process. Developing a better appreciation of the cognitive processes behind jurors' decisions can help improve the fairness and effectiveness of the criminal justice system [13]. Considering the upsurge of interest in cognitive processing and decision-making in legal circles, the impact of ITE in juror deliberations seems apropos and timely as it has not yet been examined in this context.

While the ITE phenomenon is well-established [3], the current study sought to explore if the temporal order of evidentiary facts also has any effects in decision-making.

Neuropsychological research [14] continues to support a strong effect of information placement on learning and information recall patterns, namely primacy effects (information presented early in the narrative is better recalled) and recency effects (information presented later in the narrative is better recall). Whether there can be a greater influence imparted by a primacy effect or recency effect in legal decision-making is still being debated. To date, there have been mixed results about whether there is a stronger primacy effect in the context of decision-making [15] or not [16]. However, a study by Dennis and Ahn [17] held a firm position that critical information presented early (primacy effect) influenced participants' ability to draw causal relationships with respect to information that followed. Hence, timing in terms of when to introduce evidence may be important.

In this study, we explored the impact of repeating certain critical facts in a criminal case on a naive sample of participants' decision-making toward important evidentiary facts (e.g., DNA evidence), as well as the implication of repeating the information at various points in the deliberative process. Firstly, if ITE holds, then participants will show a bias in weighing various components of the second-degree murder trial in the vignette. Secondly, according to Dennis and Ahn [17], ITE at the beginning of the summary of facts (primacy) should have more impact than any other placements within the narrative. Lastly, as mentioned above, we sought to determine whether ITE would also impact other important or case related details.

Methods

Recruitment and Participants

Participants were recruited from undergraduate students enrolled at McMaster University in Hamilton, Ontario, Canada, through SONA Systems. This online recruitment system allows students, primarily enrolled in an Introduction to Psychology course to receive credit for participation in psychology studies. Participants were granted 0.5 credits toward their final grade. In total, 100 participants completed the study, which took on average 30 minutes. Participants' ages ranged from 18 to 26 years old, with a median age of 18. There were 84 female participants, 15 male participants, and one participant who preferred not to disclose. This study received ethical approval from McMaster Research Ethics Manager, project number 347.

Vignette Design

Participants were asked to read an abbreviated version of an actual Canadian criminal case, *R. v. Kionke*, 2017. A summary of the case is provided [18] excluding the judge's final verdict to parallel what participants read in the vignette:

Summary: *R. v. Kionke*

> *On September 4, 2013, the bodies of Crow and Sinclair were found in their apartment on the third floor of a rooming house on Chestnut Street, in Winnipeg, Manitoba. Kionke lived in an apartment on the second floor. An autopsy performed on the bodies confirmed that Crow and Sinclair had died from multiple stab wounds, and due to the state of the bodies when they were discovered, the exact date of their death is unknown. On September 5th, 2013, Kionke and his girlfriend, Randall, were interviewed by investigators as potential witnesses. At this interview, Kionke and Randall both denied having knowledge of any information. In November 2013, after Randall's relationship with Kionke ceased, she returned to the police and updated her statement, admitting that Kionke had informed her to lie to the police during the original interview. In February 2014, Kionke was arrested and interrogated for a second time, while some details changed, he maintained his innocence. At trial, Kionke testified that Crow and Sinclair had stabbed each other and during the trial, Kionke stated a number of falsehoods and contradictions. Expert testimony also confirmed Kionke's DNA was found in multiple locations in Crow and Sinclair's apartment.*

In this case, the accused, Kionke, was found guilty of second-degree murder of his neighbours. For this study, the case was modified and the judge's verdict, including commentary, was removed. The final modified vignette was seven pages long (about 3,600 words). Four experimental versions of the vignette were created. Participants were randomly assigned to one of four experimental conditions (Groups). Two key phrases were selected to emphasize the noncredibility of the accused (i.e., Kionke was an unreliable witness) and the gravity of the injuries (i.e., multiple stab wounds).

1. Group 1 served as the control condition in which no manipulation or repetition of the key phrases was present, so "multiple stab

wounds" and "Kionke was an unreliable witness" remained intact as per the original case vignette.

2. Group 2 was used to assess the effect of ITE. As such, the key phrases "multiple stab wounds" and "Kionke was an unreliable witness" were evenly distributed throughout the entire vignette, repeated seven times each.

3. Group 3 was used to test the primacy effect, so the phrases "multiple stab wounds" and "Kionke was an unreliable witness" were each repeated seven times within the first half of the vignette.

4. Group 4 was used to test the recency effect, so participants were presented with a vignette containing the phrases "multiple stab wounds" and "Kionke was an unreliable witness" repeated seven times each within the last half of the vignette.

Questionnaire Design

A questionnaire was developed to assess the impact of the various manipulations described above. Participants were instructed to complete it after reading the vignette. The questionnaire contained 12 questions using a Likert-type scale, ranging from 1 Strongly Disagree to 7 Strongly Agree, to ascertain their level of agreement with the statement or question. The scale was reversed every alternating question to avoid a directional response bias (i.e., checking automatically the left or right side of the scale). The questionnaire had three questions of interest to measure the influence of ITE (i.e., 5, 6, and 10). As far as placement or primacy versus recency, three questions sampled facts found only at the beginning of the case (i.e., 1, 2, and 11) and three questions sampled facts found only at the end of the case (i.e., 4, 8, and 12). We also used a neutral space by asking three questions sampling facts in the middle of the case (i.e., 3, 7, and 9).

Procedure

After informed written consent was obtained, participants were presented with a paper version of a modified case vignette involving the criminal case and a questionnaire. Participants were instructed to read the vignette in its entirety before completing the questionnaire. After reading the vignette, the questionnaire was completed without making any further reference to the vignette. Participants were reminded at the outset that there was no time constraint, and they could spend longer than the 30 minutes allotted to complete the study, if necessary.

Data Analysis

To examine the influence of repetition (ITE), Kruskal-Wallis ANOVAs for nonparametric statistics were performed. A priori the following analyses were suggested to address the hypotheses generated by this study.

In test one, a whole ANOVA was planned to determine if any differences existed in terms of the responses provided to all 12 questions across all four groups.

In test two, we planned to highlight the potential impact of ITE; hence Group 1 (control) was to be compared to the experimental Groups 2, 3, and 4 (ITE). To examine the impact of the recency and primacy effects on jurors' decision-making, two additional Kruskal-Wallis ANOVAs for nonparametric statistics were proposed.

In test three, Group 2 was to be contrasted to Groups 3 (primacy) and 4 (recency) combined.

In the last test, Groups 3 (primacy) and 4 (recency) were compared to each other.

Before implementing the statistical approaches described above, descriptive statistics were performed on the whole sample across groups and questions to assess statistical characteristics (e.g., skewness) of the sample.

Debriefing

Following completion of the study, participants were presented with a debriefing form, which they were encouraged to read in the presence of the examiner. Any questions generated by the debriefing process were addressed by the examiner. As the vignette contained details

pertaining to a second-degree murder trial that could be construed as disturbing to some after the completion of the study (i.e., after leaving the laboratory), each participant was also provided with the written resource contact information of the McMaster Student Wellness Centre, instructed to visit their family doctor, or instructed to visit the emergency department of their local hospital if they felt their well-being warranted it.

Results

Given the nature of the data, a nonparametric approach was suggested. However, after an initial sweep of the data (i.e., descriptive statistics), it was determined that the data was not skewed uniformly across all questions for the four groups, thus the use of a statistic like Kruskal-Wallis nonparametric ANOVA was not feasible. In response, the data was reformatted into a binary set. As such, the Likert-type scale was parcelled into disagree (values 1 through 3) and agree (values 5 through 7) responses. Responses that contained the neutral endorsement (value 4) were discarded from the analyses. We conducted appropriate chi-square analyses to determine if the null hypothesis (i.e., no effect of ITE) was challenged. Chi-square analyses were completed for each question. The following sections provide the outcome of the statistical analyses.

Table 1: ITE in general

Table 1a Distribution of agreement across groups on Q5 Kionke is a reliable witness.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 1, Control	17 (20.2)	3 (30.0)	20 (100)
Group 2, ITE	22 (26.2)	3 (30.0)	25 (100)
Group 3, ITE-Primacy	21 (25.0)	3 (30.0)	24 (100)
Group 4, ITE-Recency	24 (28.6)	1 (10.0)	25 (100)
Total	84	10	94

Table 1b Distribution of agreement across groups on Q6 Kionke is responsible for all of the victim's multiple stab wounds.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 1, Control	14 (63.6)	8 (36.4)	22 (100.0)
Group 2, ITE	10 (45.5)	12 (54.5)	22 (100.0)
Group 3, ITE-Primacy	9 (50.0)	9 (50.0)	18 (100.0)
Group 4, ITE-Recency	6 (33.3)	12 (66.7)	18 (100.0)
Total	39	41	80

Table 1c Distribution of agreement across groups on Q10 Kionke is guilty of the two murders.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 1, Control	9 (42.9)	12 (57.1)	21 (100.0)
Group 2, ITE	5 (31.3)	11 (68.7)	16 (100.0)
Group 3, ITE-Primacy	8 (44.4)	10 (55.6)	18 (100.0)
Group 4, ITE-Recency	5 (26.3)	14 (73.7)	19 (100.0)
Total	27	47	74

ITE in General

In the first set of analyses, the impact of ITE was explored. The three questions under review focused on specific evidentiary facts, namely the accused reliability as a witness, criminal responsibility, and the determination of guilt. The findings are as follows.

Q5 Kionke is a reliable witness.

The first question addressed the issue of reliability on the part of the accused. The first step was to compare responses to Q5 across all four groups to determine if repetition of evidentiary fact (i.e., ITE) had an impact on this aspect of the accused. The findings were not significant. A visual inspection of Table 1a shows that respondents were uniformly in agreement across all group conditions; that is, the majority disagreed that Kionke was a reliable witness.

Q6 Kionke is responsible for all of the victim's multiple stab wounds.

The next question of interest, Q6, was directed at the issue of responsibility of the injuries

Table 2: ITE primacy placement[a]

Table 2a Distribution of agreement across groups on Q1 This case occurred in Winnipeg, Manitoba.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	0 (0.0)	25 (100.0)	25 (100.0)
Group 3, ITE-Primacy	2 (9.1)	20 (90.9)	22 (100.0)
Group 4, ITE-Recency	1 (4.0)	24 (96.0)	25 (100.0)
Total	3	69	72

Table 2b Distribution of agreement across groups on Q2 The doctor who performed the autopsies, Dr. Balachandra was unable to pinpoint the deceased date of death due to their state of decomposition.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	0 (0.0)	25 (100.0)	25 (100.0)
Group 3, ITE-Primacy	2 (9.1)	20 (90.9)	22 (100.0)
Group 4, ITE-Recency	1 (4.0)	24 (96.0)	25 (100.0)
Total	3	69	72

Table 2c Distribution of agreement across groups on Q11 Kionke told a number of falsehoods to police about the events of the evening including that he cut his finger while cutting a loaf of frozen bread.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	3 (12.5)	21 (87.5)	24 (100.0)
Group 3, ITE-Primacy	1 (4.2)	23 (95.8)	24 (100.0)
Group 4, ITE-Recency	1 (4.2)	23 (95.8)	24 (100.0)
Total	5	67	72

[a] Because Group 1, control, did not include ITC, it is not included in this analysis.

inflicted on the victims. Again, the overall analysis was unyielding, meaning no overall significant effects. However, a closer look at the data found in Table 1b suggests that the level of agreement between Group 1 (the control group) and Group 4 (ITE-recency) differed, which was supported by a planned contrast between the two (LR = 3.9, *df* = 1, *p* = .05). Thus, presenting the repeated information at the end of the narrative swayed the respondent about their level of agreement of Kionke's responsibility in the victims' fatal injuries.

Q10 Kionke is guilty of the two murders.

The next question, Q10, was about culpability. A visual inspection of Table 1c shows that the majority of respondents felt that Kionke was guilty. Additionally, repetition (ITE) did not influence their views in a significant manner, albeit it is noteworthy that Group 1 (the control group) (42.9% vs. 57.1%) appeared mixed in their determination, when compared with the Group 2 (ITE) (31% vs. 69%) and Group 4 (ITE-recency) (26.3% vs. 73.7%). Hence repeating key phrases increased participants' confidence that Kionke is guilty by a factor of two to three.

Overall, the findings generated by the three questions reviewed above support a role for ITE under specific conditions, namely the questions addressing issues of responsibility for the wounds inflicted (Q6) and to a similar degree, albeit not statistically significant, on the issue of guilt (Q10).

ITE Primacy

In the next set of analyses, the influence of primacy and recency effects was assessed. Thus, participants' response pattern (agree or disagree) to questions sampling various parts of the vignette was examined under conditions where the key phrases addressing the stab wounds and reliability of Kionke was either offered early (primacy) or late (recency) in the narrative. The first set of analyses investigated the impact of ITE early in the case narrative. The three questions under review focused on specific evidentiary facts, namely the location of offence, time of death, and the accused reported injuries. The findings are as follows.

Q1 This case occurred in Winnipeg, Manitoba.

Table 2a shows the results from participants' agreement with information that was presented

early in the narrative. In this case, where the murders occurred (Q1). Here the influence of ITE did not vary in a significant manner across Group 2 (ITE) or localized distribution of fact found in Group 3 (ITE-primacy) and Group 4 (ITE-recency). A closer look at Table 2a supports that overwhelmingly participants were confident (agree) about the fact that the murders occurred in Winnipeg. Moreover, the planned (ITE-primacy vs. ITE-recency) contrast, as expected, did not yield any significant findings.

Q2 The doctor who performed the autopsies, Dr. Balachandra, was unable to pinpoint the victim's date of death due to their state of decomposition.

Table 2b shows participants' appraisal of the coroner's difficulty pinpointing the actual time of death for the deceased. Here ITE did not vary in a significant manner based on widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy and Group 4, ITE-recency). A closer look at Table 2b supports that a large percentage of individuals across all groups were confident about the coroner's struggles to pinpoint the time of death regardless of placement of ITE.

Q11 Kionke told a number of falsehoods to police about the events of the evening including that he cut his finger while cutting a loaf of frozen bread.

Table 2c shows the result from the respondents' appraisal of Kionke's explanation for the origin of his injury. Here ITE did not vary in a significant manner based on widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy and Group 4, ITE-recency). A closer look at Table 2c supports that a large percentage of individuals were confident about Kionke's attempts to deceive, regardless of placement of ITE. Hence, the overall (omnibus) or planned (ITE vs. ITE-primacy or ITE-recency) contrast did not yield any significant findings.

ITE Recency

The next set of analyses investigated the impact of ITE on narrative of evidentiary facts presented late in the vignette. The three questions under review focused on specific evidentiary facts, namely the presence of DNA on the weapon, getting rid of evidence, and DNA from a third person located at the scene. The findings are as follows.

Q4 Kionke's DNA was found on a piece of copper piping outside of the victim's apartment from a passive blood stain.

As seen in Table 3a, the pattern of responses was fairly similar across groups with the exception of Group 4 (ITE-recency) that, on cursory look, displayed a stronger shift in the level of agreement. As expected, the overall analysis did not support immediate difference in widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy and Group 4, ITE-recency). However, as indicated above, Group 4 (ITE-recency) appeared to separate themselves from the other two groups in their level of confidence about the information under consideration. Hence, a marginally significant result is noted when comparing Group 2, ITE, with Group 4, ITE-recency (LR = 3.47, df = 1, p = .06).

Q8 Following the event, Kionke left the victims' apartment and showered with his clothes on to remove the blood and change into different clothes.

Table 3b presents the results from participants' appraisal of Kionke's behaviour to conceal any evidence of blood. Here ITE did not vary in a significant manner based on widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy, and Group 4, ITE-recency). A closer look at Table 3b supports that a large percentage of individuals were confident about Kionke's attempts to deceive regardless of placement of ITE. Hence, the overall (omnibus) or planned (ITE vs. ITE-primacy or ITE-recency) contrast did not yield any significant findings.

Table 3: ITE recency placement[a]

Table 3a Distribution of agreement across groups on Q4 Kionke's DNA was found on a piece of copper piping outside of the victim's apartment from a passive blood stain.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	5 (20.8)	19 (79.2)	24 (100.0)
Group 3, ITE-Primacy	3 (12.0)	22 (88.0)	25 (100.0)
Groups 4, ITE-Recency	1 (4.0)	24 (96.0)	25 (100.0)
Total	9	87	96

Table 3b Distribution of agreement across groups on Q8 Following the event, Kionke left the victims apartment and showered with his clothes on to remove the blood and change into different clothes.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	4 (16.0)	21 (84.0)	25 (100.0)
Group 3, ITE-Primacy	6 (24.0)	19 (76.0)	25 (100.0)
Group 4, ITE-Recency	3 (12.0)	22 (88.0)	25 (100.0)
Total	13	62	75

Table 3c Distribution of agreement across groups on Q12 Some of the DNA found in the swab taken was from an unidentified male known as Male 3.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	5 (25.0)	15 (75.0)	20 (100.0)
Group 3, ITE-Primacy	3 (13.0)	20 (87.0)	23 (100.0)
Group 4, ITE-Recency	4 (16.0)	21 (84.0)	25 (100.0)
Total	12	56	68

[a] Because Group 1, control, did not include ITC, it is not included in this analysis.

Q12 Some of the DNA found in the swab taken was from an unidentified male known as Male 3.

Table 3c presents the pattern of responses to the DNA findings. As expected, the overall analysis did not support immediate difference in widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy, and Group 4, ITE-recency). However, as indicated above, Group 4 (ITE-recency) appeared to separate themselves, albeit ever so slightly, from the other two in their level of confidence about the information being considered. Hence, a marginally significant result is noted when comparing Group 2 (ITE) with Group 4 (ITE-recency) (LR = 3.47, *df* = 1, *p* = .07).

ITE Middle

We include another position to the examination, adding questions sampling facts from the middle of the case. We wondered if strategic repetition of key phrases would have any impact on participants' processing of the questions about information located in this sector of the narrative. The findings presented by Dennis and Ahn [17] support greater primacy effects on evaluation of pertinent information. As such, the reasoning was that information presented in the middle would possibly be preferentially influenced by primacy effect. The three questions under review focused on specific evidentiary facts, namely the location of a potential accomplice, arrest location, and the possibility of obstructing justice. The findings are as follows.

Q3 Kionke's girlfriend testified that on the evening of the crime she was with her son getting ice caps.

Table 4a shows the results from participants' appraisal of Kionke's girlfriend's behaviour on the night of the offence. Here ITE did not vary in a significant manner based on widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy, and Group 4, ITE-recency). A closer look at Table 4a supports that a large percentage of individuals were confident (agree) about Kionke's girlfriend's whereabouts that night. Hence, the overall or planned (ITE vs. ITE-primacy or ITE-recency) contrast did not yield any significant findings.

Q7 Kionke was arrested in Regina, Saskatchewan, in February of 2014 and brought in for questioning.

Table 4b presents the location of the arrest. As expected, the overall analysis did not support immediate difference in widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE-primacy, and Group 4, ITE- recency). However, Group 3 appeared to separate themselves, albeit ever so slightly, from the other two groups in their level of confidence about the information being considered. Hence, a significant result is noted comparing Group 2 (ITE) from Group 3 (ITE- primacy) (LR = 3.99, *df* = 1, *p* = .04), while none is seen between primacy and recency groups.

Q9 Kionke's girlfriend at the time knew about the event and did not tell police.

In Table 4c, participants weighed in on their belief of Kionke's girlfriend's knowledge of the event. Here in the middle position, this type of information did not appear to move the respondent's level of agreement across the three ITE conditions. In fact, ITE did not vary in a significant manner based on widespread dissemination of fact repetition (Group 2, ITE) or localized distribution of fact (Group 3, ITE- primacy, and Group 4, ITE-recency). A closer look at Table 4c supports that respondents were almost split in half about their agreement on the girlfriend's knowledge of the events. Hence, the overall or planned (ITE vs. ITE- primacy or ITE-recency) contrast did not yield any significant findings.

The findings above provide limited evidence that information sampled in the middle of the narrative was influenced by the placement of repeated key phrases (ITE), in this case at the beginning of the vignette.

Table 4: ITE middle placement[a]

Table 4a Distribution of agreement across groups on Q3 Kionke's girlfriend testified that on the evening of the crime she was with her son getting ice caps.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	3 (25.0)	21 (75.0)	24 (100.0)
Group 3, ITE-Primacy	0 (0)	22 (100.0)	22 (100.0)
Group 4, ITE-Recency	1 (16.0)	23 (84.0)	24 (100.0)
Total	4	66	70

Table 4b Distribution of agreement across groups on Q7 Kionke was arrested in Regina, Saskatchewan, in February of 2014 and brought in for questioning.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	10 (58.8)	7(41.2)	17 (100.0)
Group 3, ITE-Primacy	6 (27.3)	16 (72.7)	22 (100.0)
Group 4, ITE-Recency	8 (34.8)	15 (65.2)	23 (100.0)
Total	24	38	62

Table 4c Distribution of agreement across groups on Q9 Kionke's girlfriend at the time knew about the event and did not tell police.

	Level of agreement, *n* (%)		
Group	**Disagree**	**Agree**	**Total**
Group 2, ITE	10 (41.7)	14 (58.3)	24 (100.0)
Group 3, ITE-Primacy	9 (40.9)	13 (59.1)	22 (100.0)
Group 4, ITE-Recency	13 (54.2)	11 (45.8)	24 (100.0)
Total	32	38	70

[a] Because Group 1, control, did not include ITE, it is not included in this analysis.

Discussion

The purpose of this study was to explore if repetition and placement of evidentiary information influenced jurors' perceptions of a case. The findings support an effect of information manipulation, namely ITE and its placement within the vignette, on participants' appraisal of various questions related to a charge of second-degree murder. Our findings are discussed below in the context of the current literature and possible implications for juror deliberations.

ITE in General

The impact of ITE, without reference to placement, focused on the reliability, credibility, and criminal responsibility of the accused. The analysis supported a significant finding on the question of responsibility for the victim's injuries (Q6), as the level of agreement was statistically influenced by the repetition of the key phases. As it pertained to Kionke's reliability as a witness, the entire sample of participants agreed he was culpable of the offence regardless of group assignment. Hence, this study suggested that the impact of ITE may be critical when individuals such as jurors are asked to attribute weight to pertinent legal evidence. It has been well documented that repeated information of an ambiguous statement increases the probability it will be deemed true [10]. This notion has been shown to hold in many different contexts; however, this study is the first to demonstrate that ITE could be relevant in the context of legal decision-making.

Moreover, these findings suggest that the manner in which information is presented, namely repetition of critical evidence, may hold increased salience with respect to its pe suasive nature. In the courtroom, an expert's testimony is frequently challenged during cross-examination by using strategies or tactics to discredit the information provided. As well, evidence-based literature supports that where expert testimony is provided, jurors become more skeptical of nonexpert testimony, thus ensuring the need to consider the weight and source of the legal evidence presented [19]. The ITE findings in this study support the position that repetition of key evidence will further influence jurors' perception of facts, as illustrated by the comparison of Group 1 (the control) and ITE groups in Q6 (responsibility) and Q10 (guilt).

ITE Placement

Findings generated by this study suggest that the placement of key phrases influences participants' perceptions of legal case material. The design of our study linked repetition of key phrases and location of evidence surveyed by targeted questions. As such, when ITE was at the beginning of the vignette, we sampled evidence located in that section of the case (primacy), and vice versa at the end of the case (recency). Information provided at the beginning (primacy) did not appear to greatly impact participants, as reflected by consistent responding across group assignments about where the murder occurred, the fact that the coroner could not reliably establish time of death, or that Kionke falsely disclosed that he cut his finger while slicing a frozen loaf of bread.

In contrast, clustering information (ITE) at the end (recency) seems to be more relevant and pertinent for deliberation of evidentiary facts. This was particularly evident with respect to DNA evidence, as illustrated by participants' responses to the questions addressing the presence of a third party via DNA (Q12) and that Kionke's DNA was found at the location of the crime (Q4). Previous literature was mixed as to whether a primacy effect exists or not [16,17]. However, in their persuasion study examining primacy and recency effects, Miller and Campbell [20] found that a recency effect is noticeable when there is a delay between communicated arguments. Although there is no control over timing effects of communicated arguments (i.e., no delays), a stronger recency effect than primacy effect was demonstrated, more so pertaining to critical evidence such as DNA findings. A single primacy effect was found in relation to the arrest (i.e., nonexpert evidence). Thus, it appears that pertinent information presented later in the stream of factual evidence is an important factor in a juror's decision-making.

An additional and unanticipated finding generated by the questions addressing the issue of DNA (Q4 and Q12) highlighted that the nature or characteristic of the critical evidence matters in the decision-making process, especially when it was contrasted with the question that dealt with Kionke washing blood off his clothes (Q8). Thus, the nature (or characteristic) of the evidence may also be germane in influencing how jurors make their decisions. Gigerenzer and Gaissma [6] demonstrated the importance of salience noting that if one option is recognized

faster than another, it is given a high value in decision-making, and repetition increases the ease in which individuals understand statements [6]. Questions addressing the DNA (Q4 and Q12) were evidence-based questions (i.e., facts supported by science), whereas the question about Kionke washing his clothes (Q8) was more of a nonexpert related question. It has been well documented that lay individuals have a high degree of confidence in the accuracy and reliability of DNA testing [21]. These results suggest that perhaps placement is not affected by opinion, but salience and perceived robustness of facts, as demonstrated by DNA evidence holding greater weight in participants' decision-making. This could be an additional important factor in the understanding of ITE during legal decision-making; that is, it may not just be the repetition of key information, but it is the association to critical (scientifically credible) evidence that is noteworthy. The findings from this study suggest that repetition of more reliable evidence, such as DNA evidence, whether accurate or not, could influence an individual's perceptions of its trustworthiness. Whereas previous research supports the impact of persuasion [2], our findings indicate that the mechanism underlying persuasiveness may be impacted by ITE and placement of critical evidence. More research is required to examine this relationship.

Conclusion

This study provided evidence that repeating (ITE) certain types of details, like the unreliability of an accused and gravity of injuries inflicted on victims, mattered in a potential juror's decision-making process. Other important evidentiary facts, such as DNA evidence, may also be impacted by the repetition (ITE), particularly when that information is presented toward the end of a trial.

Limitations

This research was conducted in a laboratory within a university setting and therefore not comparable with a real trial and jury environment. Each participant was presented with the same vignette and questionnaire, then invited to share their opinion individually. As such, this study had a lower level of ecological validity compared with the real conditions a jury would experience through the key process of group deliberation. Additionally, in a courtroom, a jury consists of a collective group that deliberates as a group to reach a verdict after the presentation of evidence in court. Moreover, a jury would typically receive specific instructions from a judge before deliberations. Hence, the lack of judiciary direction and group discussion limits this study's generalizability to some extent. Furthermore, participants read the information in the form of a case vignette, which is not comparable to how events unfold in an actual criminal trial. The participants in this study read a case vignette and critical information from one source, a legal case. In a real criminal trial, information would otherwise be presented by many witnesses; therefore, jurors can not only listen to and weigh the information before deliberating, but they can also see the witnesses as they testify. In a real-life setting, jurors' decisions can be influenced by nonverbal body language that occurs in the courtroom, which could not be replicated in this study.

We recognize that the context, individuality, and single source of information provided to participants in this study placed some limitations on the overall generalizability of the results. However, as shown here, ITE and placement appears to influence individual's deliberation process, which in a real-life context of deliberation has the potential to also impact the larger group (i.e., normative social influence). Notwithstanding, these effects merit further inquiry, including the aforementioned considerations.

In this study, the sample was drawn from a restricted pool of potential participants, which is not representative of all potential jury-pool members at large. Jury members can range in age, geographical location, and education, and typically are selected strategically by lawyers. Our sample was fairly homogenous, mainly comprised of undergraduate students enrolled in this study, all pursuing the same level of education and within a similar age group.

Also, the composition of questions is a matter of review. Although the intent was to repeat critical information either throughout or in select areas of the case, more attention is needed to balance factors that may inadvertently bias the juror. For example, in future studies, it would be important to assure that placement and repetition is balanced in terms of relevance across importance of evidentiary information. These efforts would help distinguish between the impact of placement and repetition versus the nature of the information itself in the deliberation process. The need to eliminate possible confounds of opinion and evidence-based inquiry across the entire narrative of the case vignette is also critical in this process. It would be important to investigate the impact of ITE on erroneous information that may sway a potential juror from a guilty to non-guilty verdict, or vice versa.

Future Studies

Despite the limitations above, this is the first study to look at the ITE and evidentiary information placement in the context of juror decision-making. Hence, this study provides a basis for future studies to examine the influence of repetition and placement of critical evidence within a courtroom setting. As previously discussed, this study could be repeated using a mock-jury setting; hearing the evidence as opposed to reading it; including a more diverse participant demographic group rather than undergraduate students; and allowing participants to collectively deliberate over evidence presented from both defence and prosecution before making their final decision. In implementing these suggestions in future research, the impact of ITE and placement of evidentiary information could be assessed in a more ecologically valid manner. As such, we feel these findings have merit and provide a starting point to examine these other considerations about the potential impact of ITE and placement of critical information in jury deliberations.

Conflict of Interest: none

References

1. Gold V. Psychological manipulation in the courtroom. *Nebraska Law Review.* 1987;66(3):563-583. https://digitalcommons.unl.edu/nlr/vol66/iss3/11/.
2. Tanford S, Penrod S. Jury deliberations: Discussion content and influence processes in jury decision making. *Journal of Applied Social Psychology.* 1986;16(4):322-347. https://doi.org/10.1111/j.1559-1816.1986.tb01144.x.
3. Hasher L, Goldstein D, Roppino T. Frequency and the conference of referential validity. *Journal of Verbal Learning and Verbal Behavior.* 1977;16(1);107-112. https://doi.org/10.1016/S0022-5371(77)80012-1.
4. Wang W, Brashier N, Wing E, Marsh E, Cabeza R. On known unknowns: Fluency and the neural mechanisms of illusory truth. *Journal of Cognitive Neuroscience.* 2016;28(5):739-746. https://doi.org/10.1162/jocn_a_00923.
5. Fazio L, Brashier N, Payne B, Marsh E. Knowledge does not protect against illusory truth. *Journal of Experimental Psychology: General.* 2015;144(5):993-1002. https://doi.org/10.1037/xge0000098.
6. Gigerenzer G, Gaissmaier W. Heuristic decision making. *The Annual Review of Psychology.* 2011;62:451-82. https://doi.org/10.1146/annurev-psych-120709-145346.
7. Unkelbach C, Rom S. A referential theory of the repetition-induced truth effect. *Cognition*. 2017;160:110-126. https://doi.org/10.1016/j.cognition.2016.12.016.
8. DiFonzo N, Beckstead J, Stupak N, Walders K. Validity judgments of rumors heard multiple times: The shape of the truth effect. *Social Influence.* 2016;11(1):22-39. https://doi.org/10.1080/15534510.2015.1137224.
9. Oppenheimer D.M. The secret life of fluency. *Trends in Cognitive Sciences*. 2008;12(6):237-241. https://doi.org/10.1016/j.tics.2008.02.014.
10. Dechêne A, Stahl C, Hansen J, Wänke M. The truth about the truth: A meta-analytic review of the truth effect. *Personality and Social Psychology Review*. 2009;14(2):238-257. https://doi.org/10.1177/1088868309352251.

11. Henkel L, Mattson M. Reading is believing: The truth effect and source credibility. *Consciousness and Cognition.* 2011;20(4):1705-1721. https://doi.org/10.1016/j.concog.2011.08.018.
12. Belcher A, Sinnott-Armstrong W. Neurolaw. Wiley Interdisciplinary Reviews. *Cognitive Science.* 2009;1(1):18-22. https://doi.org/10.1002/wcs.8.
13. Jones O, Marois R, Farah M, Greely H. Law and neuroscience. *The Journal of Neuroscience*. 2013;33(45):17624-17630. https://doi.org/10.1523/JNEUROSCI.3254-13.2013.
14. Morrison AB, Conway ARA, Chein JM. Primacy and recency effects as indices of the focus of attention. *Frontiers in Human Neuroscience.* 2014;24:1-14. https://doi.org/10.3389/fnhum.2014.00006.
15. Highhouse S, Gallo A. Order effects in personnel decision making. *Human Performance.* 1997;10(1):31-46. https://doi.org/10.1207/s15327043hup1001_2.
16. Marsh J, Ahn W. Order effects in contingency learning: The role of task complexity. *Memory & Cognition.* 2006;34(3):568-576. https://doi.org/10.3758/BF03193580.
17. Dennis M, Ahn W. Primacy in causal strength judgments: The effect of initial evidence for generative versus inhibitory relationships. *Memory & Cognition.* 2001;29(1):152-164. https://doi.org/10.3758/BF03195749.
18. *R. v. Kionke*, 2017 MBQB 60 (CanLII). https://www.canlii.org/en/mb/mbqb/doc/2017/2017mbqb60/2017mbqb60.html.
19. Leippe M, Eisenstadt D, Rauch S, Seib H. Timing of eyewitness expert testimony, jurors' need for cognition, and case strength as determinants of trial verdicts. *Journal of Applied Psychology.* 2004;89(3):524-541. https://doi.org/10.1037/0021-9010.89.3.524.
20. Miller N, Campbell D. Recency and primacy in persuasion as a function of the timing of speeches and measurements. *Journal of Abnormal and Social Psychology.* 1959;59(1):1-9. https://doi.org/10.1037/h0049330.
21. Brewer P, Ley B. Media use and public perceptions of DNA evidence. *Science Communication.* 2009;32(1):93-117. https://doi.org/10.1177/1075547009340343.

Corresponding author
Bruno Losier, St. Joseph's Healthcare Hamilton, 100 West 5th Street, Hamilton, ON L9C 0E3, Canada; 905-522-1155 ext. 39357 - email: losierb@stjoes.ca

ORIGINAL ARTICLE

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Report on the Distribution of the Social Determinants of Health and Health Equity in a Forensic Psychiatry Program

Samantha Perrotta,[1] Bruno Losier[2,3]

[1] Department of Health Aging and Society, McMaster University, Hamilton, Canada; [2] Department of Psychiatry and Neurosciences, McMaster University, Hamilton, Canada; [3] Forensic Psychiatry Program, St. Joseph's Healthcare Hamilton, Hamilton, Canada

The social determinants of health are important factors that shape a person's well-being, life expectancy, and quality of life. The environments in which people live, work, and play are paramount in determining their overall health. As such, viewing health as an outcome, not only of individual choices and biomedical factors but also of socioenvironmental influences, can be an important lens to guide health-care practice. This report examined the social determinants of health of people admitted to inpatient units in a forensic psychiatry program in a major Canadian urban centre. Twenty health variables were collected from the Resident Assessment Instrument–Mental Health form. A deprivation scale was created to understand social and material inequality on a gradient. Findings showed that those surveyed had high rates of poor social determinant of health factors, such as low educational attainment, insecure housing, and lack of secure employment before their admission to the program. Chi-square tests showed associations between material deprivation, race, and comorbidity status. The findings may influence a multisectorial approach to mental illness prevention, management, and recovery practices.

Key Words: *forensic mental health, social determinants of health, health equity*

Even in the most affluent societies, people in lower socioeconomic status groups experience shorter lifespans [1]. People who are more socially and economically deprived have higher rates of stress, mental illness, cardiac disease, and other chronic conditions, which lead to poorer quality of life and lowered life expectancies [2]. This health disparity between those who are more and less socially and economically deprived is referred to as health inequity. Health inequities are considered avoidable and are shaped by social structures and policies [3].

Social structures and the environments in which people live, work, and play are powerful factors in shaping health and are known as social determinants of health [3]. The social determinants of health influence health equity and are identified by the Canadian Public Health Association [4] to include:

- income and income distribution
- education
- unemployment and job security
- employment and working conditions
- early childhood development
- food insecurity

- housing
- social exclusion or social safety network
- health services
- Indigenous status
- gender
- race
- disability

The social determinants of health are important to understand and apply in health-care environments. As the World Health Organization indicates, they account for between 30% and 55% of health outcomes and are more important than lifestyle choices and health interventions in affecting health [3]. This influence can be observed in mental illness rates, which are more prevalent in lower socioeconomic status groups [5]. Moreover, mental illness is associated with increased mortality in comparison to the general population, largely due to preventable illnesses [6]. This will also be addressed in this report. Social and environmental factors, including race, ethnicity, early childhood trauma, lowered ability to perform in education, inability to find or participate in stable employment, lower income, unequal access to greenspace and healthy foods, poor social relationships, and more can influence or exacerbate mental illness and other chronic conditions [5]. The social determinants of health will be carried forward as the guiding framework of this report. It recognizes that health status is influenced by a person's broader social context and can be used to understand their need for support from social institutions, such as a forensic psychiatry program (FPP) and others.

Note on Language

As models of health care in a Canadian context shift toward person-centred care (PCC), we followed language aligned with PCC philosophy for this article. PCC is associated with improved care, better health outcomes, and enhanced feelings of dignity and comfort [7]. It recognizes the person before their disease and acknowledges them as active and autonomous agents in their care [8]. In the mental health literature, there is opposition for the term patient as it implies one is a passive recipient of care [8]. As such, we opted to describe those admitted to the FPP as people or individuals.

Application to Forensic Population

For people who use mental health services, histories of poverty, neglect, and abuse, as well as psychological, biological, and genetic factors are common and believed to have contributed to their mental illness. While people with a mental illness are overrepresented in the criminal justice system, this diagnosis alone is not linked to an increased likelihood of criminal behaviour [9,10]. The most important predictors associated with high rates of criminal behaviour and recidivism in this population include antisocial personality disorders, psychopathy, neurocognitive brain impairment (associated with impulsivity), substance abuse, having antisocial associates, and living in chaotic environments with limited social supports [10]. Socially disorganized communities tend to support substance abuse and violence, which can exacerbate criminogenic characteristics for those with a mental health concern.

While recovery efforts improve a person's well-being, given the low-income status of those in the criminal justice system, people often must return to similar environments that led them to criminal activity initially [11]. Those who come into contact with the law generally have been exposed to numerous social and environmental factors influencing criminal behaviour, poor health outcomes, or both [12]. Global studies indicate that those sentenced for an offence have higher rates of infectious disease, brain injury, and psychiatric disorders than the general population [13]. Additionally, it is more common for this population to experience low educational attainment, low-income levels, substandard housing, and high rates of unemployment [13]. A narrative review was completed with articles published between 1993 and 2014 about social determinants of health data of those in the Canadian prison population [14]. That research indicated that most people in correctional facilities have at least one mental disorder as defined by the *Diagnostic and Statistical Manual*, though

exact prevalence rates vary due to a lack of reliable diagnostic activity [14].

To our knowledge, there have not been large scale, generalizable studies conducted on the social determinants of health in psychiatric populations. That is perhaps because service delivery is not centralized, though there is strong evidence that those in lower socioeconomic status groups have higher rates of mental illness [23,24]. There is a gap in the psychiatry literature on understanding how the social determinants of health can influence the need for psychiatric services. As such, a more comprehensive understanding of the complex systems that influence a person's whole socio-environmental context may contribute to more compassion for the experiences that result in an admission to forensic psychiatry.

Efforts to reduce disparities within and outside of clinical practice can have benefits on long-term health outcomes for those receiving care. However, they can be marred with pragmatic issues. For instance, a study conducted by the Canadian Medical Association in 2014 indicates that many health-care workers feel they have a lack of control over the external factors that lead to poor health outcomes in those they serve [1]. Among those barriers are lack of time and lack of understanding of what concrete steps can be taken. This has been linked to high rates of staff burnout due to feelings of low self-efficacy [1]. How then can health-care institutions and workers address these issues that are difficult to influence within their scope of practice?

Report Objectives

It is first important to understand how the social determinants of health are distributed across and within people who are admitted to forensic psychiatry. This information can be valuable to highlight trends and needs of this population to inform future goals and strategies. This report is the first attempt to evaluate the social determinants of health in this context.

The purpose of this report is to describe the social determinants of health of those surveyed within an inpatient FPP along a gradient of deprivation. The primary report objectives are:

- Identify, measure, and describe how the social determinants of health are experienced by those admitted to an FPP as presented on initial admission to the program.
- Understand how the social determinants of health are distributed based on an adapted gradient of social and material deprivation.

Methods

Sampling

Sixty people who were admitted to an FPP in a major Canadian urban centre were selected using random stratified sampling. These people were sampled from the electronic health records system representing nearly half of the program population. Fifteen people were from each of the two secure and two general inpatient units that comprise this FPP. We did not collect personal identifiable information (e.g., names and casebook numbers).

Materials

We collected data from the Resident Assessment Instrument–Mental Health (RAI-MH) form. The RAI-MH is a validated assessment tool used to gather information about people who access mental health care [15]. It is typically used at the time of admission, every three months, and at discharge. It collects information related to a person's health, mental health, and demographic variables [15]. It can be completed by physicians, nurses, and select clinicians.

For this review, we gathered data from the initial RAI-MH form completed when the person was admitted to the program. Admission data can most accurately represent exposures faced before coming into the program. We collected data from 20 variables most closely related to the social determinants of health outlined by the Canadian Public Health Association [4]. Variables included:

- sex
- race

- Indigenous status
- educational attainment
- employment status
- source of income
- usual residence status
- residential stability
- marital status
- family visit frequency
- whether person has a support person who is positive toward their discharge into the community
- whether the person lived alone immediately before admission
- who they lived with before admission
- intellectual disability
- self-rated health
- smoking status
- age at first psychiatric admission
- lifetime number of psychiatric admissions
- body mass index (BMI)
- comorbidities (co-occurrence of a medical disorder and mental disorder)

To confirm accuracy, we crosschecked RAI-MH data using chart data. We also used chart data to collect race data and some missing data.

For the secondary, exploratory analysis, we sought to understand how different groups experienced the social determinants of health on a gradient. We grouped people into those who were more or less deprived and used a variation of the Material and Social Deprivation Index (MSDI) [16] to determine categories. The MSDI groups six social factors to understand health inequities in a population based on socio-economic characteristics. The tool was modified to suit the target population in this report by using similar but more population specific variables. All variables in the dataset were dichotomized (i.e., high school diploma vs. no high school diploma). To understand material deprivation, we grouped employment status, income, and high school diploma achievement into one variable. In a similar approach, we defined social deprivation using marital status, isolation, and whether one had a support person who was positive toward discharge. We then subdivided these variables into two categories: high and low deprivation (see Table 1). We ran chi-square tests for social and material deprivation separately to determine associations between each original variable in the dataset. We excluded individual variables that were used to create the composite deprivation variables from the tests. For example, because marital status was used to create the social deprivation variable, running a chi-square test on these two variables would yield inflated results, so we excluded it.

Table 1: Adapted Material and Social Deprivation Index (INSPQ, 2019)

Material deprivation	Variables used
High (most deprived) = 0 Low (least deprived) = 1	High school diploma achievement (diploma or no diploma) Employment status (employed or unemployed) Income (income or no income)
Social Deprivation	**Variables used**
High (most deprived) = 0 Low (least deprived) = 1	Marital status (married or never married) Isolation (lived alone or lived with others) Support (has a person who is positive toward discharge or not)

Ethics

Given the project involved evaluation and a needs assessment, it was considered a quality improvement project. As such, the local research ethics board granted a waiver per the TCPS2 (2018) Article 2.5.

Analysis

We completed the primary analysis by observing frequencies to report on and patterns. We completed the secondary, exploratory analysis using chi-square tests to determine associations between the material and social deprivation categories across all variables described in the primary analysis. All analyses were performed using IBM SPSS version 26. In the data

Table 2: Demographic Measures (*N* = 60)

Variable	*n*	%
Sex		
Female	7	11.7
Male	53	88.3
Race		
White	39	65.0
People of colour	13	21.7
Indigenous	1	1.7
Non-Indigenous	59	98.3

Mean age of participants was 40 years old.

Table 3: Material-based Variables (*N* = 60)

Variable	*n*	%
Highest educational attainment		
No schooling	17	28.3
Grade 8 or less	5	8.3
Grade 9 to 11	13	21.7
High school diploma	14	23.3
Technical or trade school	1	1.7
Some college or university	7	11.7
College diploma or university degree	1	1.7
Employment status		
Employed	2	3.3
Unemployed, seeking	3	5.0
Unemployed, not seeking	28	46.7
Source of income		
Employment	2	3.3
Ontario Disabilities Support Program	34	56.7
Social assistance (unspecified)	7	11.7
Disability insurance	5	8.3
No income	8	13.3
Usual residence status		
Private home, apartment, or rented room	37	61.7
Board and care	1	1.7
Mental health residence	3	5.0
Group home	2	3.3
Psychiatric hospital or unit	13	21.7
Homeless	2	3.3
Correctional facility	1	1.7
Residential stability		
Residence was temporary	40	66.7
Residence was not temporary	20	33.3

tables, we omitted information that was not complete in the RAI-MH, inconsistent with the chart, or both. Employment status was missing from 27 cases, race status was missing from eight cases, number of psychiatric admissions was missing from two cases, and usual residence status was missing from one case.

Results

The final sample size was 60 adults (88.3% male, 11.7% female), representing nearly half of the FPP at this centre. Most adults were White (65%), and all people surveyed spoke English as a first language. One individual identified as Indigenous.

Regarding material-based variables, 45.0% of people had between a Grade 9 and Grade 12 education. As such, 46.7% of people were unemployed and not seeking employment, while 56.7% received income from the Ontario Disabilities Support Program. Also, 61.7% were admitted from a private dwelling, and 66.7% had been living in temporary or unstable housing.

With reference to social-based variables, 88.3% were single and never married. A significant proportion (40.0%) had infrequent family contact (i.e., last visited longer than one month ago).

In reviewing frequencies related to health status, 45.0% of people rated their personal health as excellent. There was a fairly even distribution of smokers and nonsmokers. A total of 61.7% of people were first admitted to a psychiatric hospital between the ages of 15 and 24 years, moreover 61.7% had four or more psychiatric admissions in their lifetime. Additionally, 76.6% of people were classified as either overweight or obese at the time of admission. Finally, 53.3% had one more or chronic disease(s) excluding their mental illness.

Table 4: Social-based Variables (*N* = 60)

Variable	*n*	%
Marital status		
Never married	53	88.3
Married	3	5.0
Separated	2	3.3
Divorced	2	3.3
Family visit occurred		
Within last 3 days	17	28.3
Within last week (more than 3 days ago)	7	11.7
Within last month (not within last week)	12	20.0
More than one month ago	24	40.0
Has support person who is positive toward discharge		
Yes	26	43.3
No	34	56.7
Who lived with immediately before admission		
Lived alone	32	53.3
Lived with others	28	46.7

Table 5: Health Status (*N* = 60)

Variable	*n*	%
Intellectual disability		
Yes	5	8.3
No	55	91.7
Self-rated health		
Excellent	27	45.0
Good	20	33.3
Fair	9	15.0
Poor	4	6.7
Smoking or chewing tobacco use		
No	34	56.7
Yes	26	43.3
Age at first psychiatric admission, years		
0–14	4	6.7
15–24	37	61.7
25–44	14	23.3
45–64	5	8.3
Number of psychiatric admissions (lifetime)		
1–3	21	35.0
4–5	13	21.7
6 or more	24	40.0
Body mass index		
Average (18.5–24.9)	13	21.7
Underweight (<18.5)	1	1.7
Overweight (25–29.9)	14	23.3
Obese (≥ 30)]	32	53.3
Comorbidities (diseases excluding mental illness)		
≥ 1 chronic disease(s)	32	53.3
≥ 1 disease risk factors	2	3.3
No comorbidities	26	43.3

Material and Social Deprivation

Results from the exploratory association tests found some significance, but overall trends were most notable. Regarding material deprivation, there was a significant association with race ($p = 0.044$). White people appeared to be disproportionately deprived in this sample.

As seen in Table 6, while intellectual disability yielded a small sample size, every person who was identified to have an intellectual disability was categorized as materially deprived ($p = 0.103$). Most marked is the association between comorbidity status (that is a co-occurrence of a medical disorder and mental disorder) and material deprivation. There were more people with a comorbidity who were also materially deprived ($p = 0.051$).

When seeking associations for social deprivation, there were no statistically significant findings (See Table 7). However, a cursory review suggested trends. Every person with an intellectual disability also fell into the social deprivation group, albeit not statistically significant. While again not statistically significant, a higher number of those who were socially deprived were first admitted between the ages of 15 and 24 years. More people with comorbidities fell into the social deprivation group, which is a notable trend.

Discussion

The framework created by this article can facilitate an understanding of preadmission factors that may impact health, provide a broader understanding to caregivers, instruct

Table 6: Associations Between Material Deprivation and Each Variable

Variable	X^2	*p*
Ethnicity	4.042	0.044
Marital status	0.008	0.930
Housing	0.318	0.573
Residential stability	1.335	0.248
Family visits	0.629	0.428
Social support	0.008	0.927
Isolation	0.356	0.551
Intellectual disability	2.664	0.103
Self-rated health	0.153	0.696
Smoking status	0.092	0.761
Age at first admission	2.759	0.430
Number of admissions	0.440	0.834
Overweight or obese	0.910	0.763
Comorbidities	3.819	0.051

Table 7: Associations Between Social Deprivation and Each Variable

Variable	X^2	*p*
Ethnicity	0.308	0.579
Education	0.988	0.320
Employment status	1.770	0.674
Income	1.140	0.286
Housing	0.057	0.812
Residential stability	0.657	0.418
Family visits	1.108	0.293
Intellectual disability	2.156	0.142
Self-rated health	0.048	0.826
Smoking status	1.827	0.171
Age at first admission	3.664	0.300
Number of admissions	0.764	0.382
Overweight or obese	0.268	0.605
Comorbidities	1.166	0.280

and guide treatment, and inform healthy public policy.

Primary Analysis

We compared the findings from the primary analysis with comparable data in the Canadian prison and general populations. The prison population is an appropriate comparison group given that people in an FPP are either admitted from a correctional facility or may avoid imprisonment secondary to criminal nonresponsibility to participate in comprehensive treatment program within a hospital context. We made efforts to bridge recommendations from the broader comparison group as it applied to an FPP, as well as to the general population to reduce risk factors that may lead to admission to an FPP.

Consistent with the literature, most people in this report were first admitted to a psychiatric hospital between the ages of 15 and 24 years. In the Canadian population, people in this age group are most likely to experience mental illness, substance use disorders, or both [17,18]. This suggests public health strategies to prevent mental illness should address those who are younger than 15 years of age. In this context, efforts at identifying those at risk need to occur at an earlier age. We suggest that health policies include greater mental health resources in schools, in common gathering places (such as not-for-profit community service organizations), and in areas with greater levels of social and economic deprivation.

Education is an important health indicator as positive associations are found between good health and higher education in the Canadian population [19]. People in this report showed low educational attainment as 58.3% did not complete high school. This is similarly reflected in the Canadian correctional population, where 46.1% have between a Grade 10 and Grade 12 education [20]. High educational attainment is correlated with better health as those in higher education groups are more likely to engage in healthy behaviours, such as exercise [21]. As such, hospitals and governments at the municipal, provincial, territorial, and federal levels need to support efforts to provide opportunities for people in an FPP.

Race and ethnicity proportions differed from the Canadian prison population. In our sample,

65% of people were White, and one individual was identified to be an Indigenous person. In the Canadian provincial and territorial correctional population combined, 52% are White and 28% are Indigenous [20]. A review of available resources for Indigenous individuals and people of colour is imperative considering the disproportionate representation in the legal system, including forensic psychiatry. Accessibility of the program to Black, Indigenous and all people of colour must be considered to ensure that FPP services are available to all groups, especially those most represented in the Canadian prison population [20]. An understanding of racism and race-based inequities, colonial histories, trauma, and disproportionate access to social resources are critical if current trends in health inequity are to change. The Ontario Ministry of Health and Long-Term Care has developed a Health Equity Impact Assessment Tool that can be used to understand how a program can maximize positive impacts and minimize negative impacts on specific population groups [22].

Secondary Analysis

Health status findings suggest that the sample population is vulnerable to disease and disease risk factors. A review of health status is important to understand given how the social determinants of health can disproportionately affect a person's health.

A large proportion of people in this evaluation were overweight or obese at the time of admission (76.6%). This is consistent with the literature, which also indicates people in forensic programs are likely to gain weight during their stay. One such study conducted in Canada in 2010 found that in a one-year period, 40.0% of people in an FPP increased their weight by at least 1 BMI [6]. Given cardiovascular disease and other chronic diseases are closely related to obesity, weight management education and programming, in addition to access to healthy foods and opportunity for physical activity, may be important for people in programs like an FPP. Because health status can impact a person's ability to function in society, for example their ability to gain and maintain long-term employment, it is an important consideration.

Those who had a comorbidity were more materially deprived than those who were not. This finding highlights the potency of the environment in influencing disease outcomes. It suggests individual responsibility to improving health alone may not be as powerful as also providing a more comprehensive approach that encompasses wider environmental health influencers. This is consistent with the literature, which indicates a social gradient in health outcomes influenced by unstable employment, poverty, and lack of social support [2]. Those with a mental illness are particularly impacted by poor health as reflected in their life expectancy, which is 10 to 20 years shorter than that of the general population [23]. Given those in the lowest income group in Canada are three to four times more likely to report fair or poor mental health than those in the highest income group [24], health may be improved by recognizing mental illness and poor health as social issues much sooner combined with a comprehensive and targeted program of key interventions.

Limitations

There are some limitations of this report to be mentioned. First, we collected data based on information entered by different staff at different points in time. Some information was missing. Future studies might gather this information in real time by one program evaluator.

Additionally, the stratified goal-directed sample may not be representative of the entire population and may be limited in its generalizability to other forensic programs. Given the small sample size in each stratum, random sampling software was not used. Using the entire FPP population available at this centre may have yielded more generalizable results. Sample size may have limited the ability to find associations in deprivation groups.

Data may have been lost in the dichotomous coding of variables used to create the population specific deprivation index.

Future studies could perform analysis using multivariate tests of association and odds ratios, which may provide information on associations as this report used a correlational test. Further, having a reference population could reveal interesting findings for comparison. Other studies might seek to include first-hand experiences through in-person interviews, which was limited in this report by COVID-19 related restrictions.

Implications

Findings from this report can be used to inform current clinical practice and organizational structures. It would be important for the program to understand and act on any access barriers, broaden multisectorial collaboration, enhance staff understanding of the social determinants of health and health equity concepts. Programs should also develop tools to ensure people's needs are being met from a social determinant of health perspective, from admission through to discharge.

There is a need to understand how institutional structures might pose access barriers to Black, Indigenous, and all people of colour. This understanding can apply a multisectorial approach to understand how a person moves into an FPP from their initial point of entry to the justice system. The Health Equity Impact Assessment [22] tool can be applied, and outcomes can be explored with the prison and mental health sectors to ensure those with the greatest need are able to access the highly beneficial services offered through an FPP.

Given the secondary exploratory findings of this report show that people in the program are socially and materially deprived, increased staff education on the social determinants of health and health equity is important. This education may improve empathy in practice as people admitted to the program can be understood as making choices within a broader social context rather than existing in a vacuum. Because the social determinants of health have a higher impact on a person's health than health interventions alone [3], a focus on altering a person's socioenvironmental context before discharge may result in improved health outcomes and lower re-admission rates.

In addition, while the RAI-MH provides rich data relative to the social determinants of health, a program-specific tool could be developed to capture all areas outlined by the Canadian Public Health Association. Information could be carried from intake to discharge to ensure all social determinant of health needs are met when a person leaves the program.

Conclusion

This report generated additional information on the social determinants of health in a sample people in an FPP. It highlights how poor social determinants of health are distributed on a social gradient. The knowledge presented may inform health-care practices, as well as policy that seeks to apply an upstream approach to minimize factors leading to the co-occurrence of mental illness and criminal activity. A multisectorial approach that seeks to reduce population-level mental illness exposures is needed.

Further, training health-care professionals to identify social challenges more easily can assist in improving quality of care. Knowledge of the social determinants of health can help health-care professionals develop a more comprehensive understanding of the people they support.

While it may seem difficult to address wide social issues as individuals, health-care professionals have a strong skillset with which to advocate for social change. Clinicians can connect people with tailored community resources and form partnerships beyond the health-care system. Collaborations can be made with multiple sectors, such as community groups, public health, and local leaders [1]. Health-care workers can model empathy and combat stigma by educating those around them and seeing those they support as people first. The combined voices of people experiencing mental illness, health-care workers, and their institutions will be important drivers of change.

References

1. Andermann A. Taking action on the social determinants of health in clinical practice: a framework for health professionals. *Canadian Medical Association Journal*. 2016.;188(17-18):E474-E483. https://doi.org/10.1503/cmaj.160177.

2. Wilkinson R, Marmot M (eds.) *Social determinants of health: The solid facts* (2nd ed.). Denmark: World Health Organization; 2003. https://www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf

3. World Health Organization. *Social determinants of health. 2020.* https://www.who.int/social_determinants/sdh_definition/en/.

4. Canadian Public Health Association. What are the social determinants of health? n.d. https://www.cpha.ca/what-are-social-determinants-health.

5. Pickett KE, Wilkinson RG. Inequality: An underacknowledged source of mental illness and distress. *British Journal of Psychiatry*. 2010;197(6):426-428. https://doi.org/10.1192/bjp.bp.109.072066.

6. Hilton NZ, Ham E, Lang C, Harris, GT. Weight gain and its correlates among forensic inpatients. *Canadian Journal of Psychiatry*. 2015;60(5):232-238. https://doi.org/10.1177/070674371506000505.

7. Scerri A, Innes A, Scerri C. Person-centred dementia care in acute hospital wards—The influence of staff knowledge and attitudes. *Geriatric Nursing*. 2020;41(3):215-221. https://doi.org/10.1016/j.gerinurse.2019.09.001.

8. Andresen R, Oades LG, Caputi P. *Psychological recovery: Beyond mental illness*. Chichester, West Sussex: Wiley-Blackwell; 2011.

9. Oliver ME. The psychology of criminal conduct (fifth edition) edited by D.A. Andrews and J. Bonta [book review]. *British Journal of Psychology*. 2011;102(3):689-690.https://doi.org/10.1111/j.2044-8295.2011.02057.x.

10. MacPhail A, Verdun-Jones S. *Mental illness and the criminal justice system*. Vancouver, British Columbia: International Centre for Criminal Law Reform and Criminal Justice Policy; 2013. https://icclr.org/wp-content/uploads/2019/06/Mental-Illness-and-the-Criminal-Justice-System-Final-VS.pdf?x96127.

11. Hiday VA. Putting community risk in perspective: A look at correlations, causes and controls. *International Journal of Law and Psychiatry*. 2006;29(4):316-331. https://doi.org/10.1016/j.ijlp.2004.08.010.

12. Trotter RT, Lininger MR, Camplain R, Fofanov VY, Camplain C, Baldwin JA. A survey of health disparities, social determinants of health, and converging morbidities in a county jail: A cultural-ecological assessment of health conditions in jail populations. *International Journal of Environmental Research and Public Health*. 2018;15(11):2500. https://doi.org/10.3390/ijerph15112500.

13. Stewart LA, Nolan A, Thompson J, Power J. Social determinants of health among Canadian inmates. *International Journal of Prisoner Health*. 2018;14(1):4-15. https://doi.org/10.1108/IJPH-08-2016-0038.

14. Kouyoumdjian F, Schuler A, Matheson FI, Hwang, SW. Health status of prisoners in Canada: Narrative review. *Canadian Family Physician*. 2016;62(3):215-222. https://www.cfp.ca/content/62/3/215.

15. Canadian Institute for Health Information. Ontario mental health reporting system metadata. 2019. https://www.cihi.ca/en/ontario-mental-health-reporting-system-metadata.

16. Institut national de santé publique du Québec. Material and social deprivation index. 2019. https://www.inspq.qc.ca/en/deprivation/material-and-social-deprivation-index.

17. Pearson C, Janz T, Ali J. *Mental and substance use disorders in Canada*. Statistics Canada Catalogue no. 82-624-X. 2013. https://www150.statcan.gc.ca/n1/pub/82-624-x/2013001/article/11855-eng.pdf.

18. Statistics Canada. Table 13-10-0394-01 Leading causes of death, total population, by age group. https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310039401.

19. Heger D. Decomposing differences in health and inequality using quasi-objective health indices. *Applied Economics*. 2018;50(26):2844-2859. https://doi.org/10.1080/00036846.2017.1412073.

20. Zinger I. Office of the Correctional Investigator annual report 2018-2019. 2019. https://oci-bec.gc.ca/cnt/rpt/annrpt/annrpt20182019-eng.aspx.

21. Hajizadeh M, Mitnitski A, Rockwood K. Socioeconomic gradient in health in Canada: Is the gap widening or narrowing? *Health Policy*. 2016;120(9):1040-1050. https://doi.org/10.1016/j.healthpol.2016.07.019.

22. Ontario Ministry of Health and Long-Term Care. *HEIA: Health equity impact assessment. 2020.* https://www.health.gov.on.ca/en/pro/programs/heia/.

23. Chesney E, Goodwin GM, Fazel S. Risks of all-cause and suicide mortality in mental disorders: A meta-review. *World Psychiatry*. 2014;13:153-160. https://doi.org/10.1002/wps.20128.

24. Mawani FN, Gilmour H. *Validation of self-rated mental health*. Statistics Canada Catalogue no. 82-003-X. 2010. https://www150.statcan.gc.ca/n1/en/catalogue/82-003-X201000311288.

Corresponding author
Samantha Perrotta, Department of Health Aging and Society, McMaster University, Kenneth Taylor Hall Room 226, 1280 Main Street West, Hamilton, ON L8S 4M4 Canada – email: perros2@mcmaster.

Review

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Forensic Psychiatry in Pakistan: An Update

Wajahat Ali Malik,[1,2] Cameron Arnold,[3] Ahila Vithiananthan,[4] Tariq Mahmood Hassan[4,5]

[1] Advocate High Courts of Pakistan; [2] National Action & Coordination Group for Ending Violence Against Children, Pakistan; [3] Department of Psychiatry, University of Toronto, Toronto, Canada; [4] Department of Psychiatry, Queen's University, Kingston, Canada; [5] Division of Forensic Psychiatry, Providence Care Hospital, Kingston, Canada

Pakistan is a lower-middle income country in South Asia where forensic psychiatry is often not recognized as a distinct subspecialty of psychiatry. Although evolution toward this direction has begun, more development in this field is needed. Before Pakistan's *Mental Health Ordinance* of 2001, much of the mental health legislation and intitutional infrastructure pertaining to the mentally ill offender can be traced back to the *Indian Lunacy Act* of 1912. The past two decades have witnessed important legal developments in the role of psychiatry in Pakistan's criminal justice system. This has been seen through the devolution of health-care provision and by an extension of psychiatric service provision from the federation (federal government) to the four provinces. Despite the sparse resources allocated to psychiatry, competent yet scarce psychiatry residents are graduating from Pakistan's accredited residency programs with an interest in forensic psychiatry. The objective of this article is to reflect on the past, while examining the current state of existing forensic mental health in Pakistan. This article will also address the future trajectory of forensic psychiatry in Pakistan and supports the establishment of forensic psychiatry as a subspecialty in Pakistan.

Key Words: *forensic psychiatry, mentally ill offender, criminal justice system, criminal responsibility, juvenile justice system, Pakistan*

The Islamic Republic of Pakistan is a majority Muslim country in South Asia with a population of 220 million in a geographical land mass of 800,000 km^2. Pakistan has four provinces (Sindh, Punjab, Khyber Pakhtunkhwa, and Baluchistan); two governments in charge of the Administrative Territories (Gilgit-Baltistan, Azad Jammu and Kashmir) and the Islamabad Capital Territory governed by the federal government. Pakistan has a rich history dating back a millennium with its judicial evolution having passed through three key stages: the Hindu rule, the Muslim rule, and the British colonial rule [1]. The fourth and current era began in 1947 following partition from British India toward the establishment of Pakistan as an independent state [1].

Forensic Psychiatry Training

The College of Physicians and Surgeons Pakistan (CPSP) [2] regulates postgraduate medical education. In 1965, the Jinnah Postgraduate Medical Centre was the first fully accredited institution to offer a psychiatry residency training program. Today, 41 institutions have full accreditation for psychiatry residency training programs in Pakistan. Successful completion of the second part of the FCPS exam confers a Fellowship from the College of Physicians and Surgeons, Pakistan. In the final

module, forensic psychiatry is documented as part of the overall syllabus. This requires the resident to have assessed under supervision 10 forensic patients overall and be trained in understanding:

1. *The Mental Health Act,*
2. administrative management of psychiatric cases,
3. forensic psychiatric syndromes,
4. psychiatrists' role in court,
5. management of violence and risk assessment, and
6. psychiatric report.

At this time in psychiatry, the CPSP offers further accredited training only in child and adolescent psychiatry.

Mental Health Legislation in Pakistan

Mental health legislation in Pakistan has witnessed significant changes over the past 20 years. Until 2001, Pakistan's mental health legislation was traced back to the *Indian Lunacy Act* of 1912. In 2001, a draft document was presented at the Pakistan's Psychiatric Society's biennial conference. This conference was attended by both United Kingdom–trained Pakistani psychiatrists alongside local Pakistani psychiatrists. This conference worked toward drafting the *Mental Health Ordinance* (MHO) 2001 [3]. The MHO was largely based on the United Kingdom's *Mental Health Act* of 1983 [4]. The MHO was issued in the form of a presidential order, with the purpose of changing the law to promote mental health, prevent deterioration of mental disorders, and appropriately care for those with mental health disorders [3]. The MHO defines a "mentally disordered prisoner" as someone who is detained in a psychiatric facility under the provisions of various criminal procedures, *Prisoners Acts* and under the *Pakistan Air Force Act* and *Navy Ordinance* [3]. The MHO allowed for secure forensic psychiatric facilities under the control of the Inspector General of Prisons [3].

Under the MHO 2001, the Federal Mental Health Authority was established with the aim of developing national standards for patient care. A board of visitors was formed to provide regular inspections and review the facilities to ensure a proper standard of care [3]. However, despite advances in the legislative framework, practice lagged behind.

In 2010, Pakistan's Constitution was updated after the 18th Constitutional amendment, which led to many changes, including devolving health from the Federal Mental Health Authority (federal control) to the provinces. It was deemed that the provinces would decide on the appropriate mental health legislation through their respective assemblies. Since the MHO 2001 was not passed by an act of parliament into law, it lapsed.

The southern province of Sindh took the initiative among Pakistan's four provinces in transitioning the MHO 2001 to the *Sindh Mental Health Act* 2013 (SMHA 2013) [5]. Its rules were enacted in 2014 to oversee the procedural matters required for compliance with the act's provisions [6].

In 2017, the Government of Sindh formed the Sindh Mental Health Authority under the provision of section 3(1) of the SMHA 2013, providing an institutional and bureaucratic infrastructure for the provision of forensic psychiatric services in the region [5]. Subsequently the *Punjab Mental Health Act* of 2014, *Khyber Pakhtunkhwa Mental Health Act* 2017 and *Baluchistan Mental Health Act* 2019 were established.

Criminal Justice Legislation

Pakistan's judiciary is divided into the superior and subordinate judiciary. The superior judiciary consists of the Supreme Court of Pakistan, five High Courts and the Federal Shariat Court. The subordinate judiciary comprises the civil and criminal courts. The judicial system in Pakistan combines remnants of British law and fundamental Islamic principles, which are intertwined in the judicial fabric of Pakistan.

Pakistan Penal Code 1860

The *Pakistan Penal Code* 1860 (PPC) is the official criminal code of Pakistan, serving as a legal index and reference text for all criminal offences in the country [7]. Much of its content and structure was inherited from the *Indian Penal Code* established by Lord Thomas MacCauley in 1860 at the request of the British government [7]. The PPC was formalized following the creation of the Islamic Republic of Pakistan, following the Partition of India in 1947 [7].

Criminal Responsibility

Sections 82, 83, and 84 of PPC 1860 respectively provide legal provisions that mitigate the attribution of criminal responsibility under those circumstances where an offender is deemed to be a child or of unsound mind [7]. Children who are under 10 years of age are not held criminally responsible. If a child is younger than 14 years old, they would not be considered responsible for an offence only if it is deemed that they have an immature understanding of their conduct and its nature and consequences [7]. However, internationally accepted level of age of criminal responsibility ranges from 14 to 16 years old [8]. It is therefore of paramount importance that qualified individuals assess the child's emotional understanding, intellect and mental age in total. This would have an impact in determining the individual's fitness to stand trial and criminal responsibility.

Criminal Procedure Code 1898

The *Criminal Procedure Code* 1898 (CrPC 1898) establishes the rules that govern criminal procedure in Pakistani courts. The purpose of the CrPC 1898 is to provide formal guidelines for the legal consequences of criminal offences codified in the PPC 1860. Part VIII, Chapter XXXIV of the CrPC titled Lunatics describes the procedure of conducting a trial or inquiry in the case of a lunatic accused [9].

Capacity to Defend

An essential role of the criminal justice system is to determine whether those who are criminally charged are fit or competent to stand trial. In Pakistani law, fitness to stand trial is worded as "capacity to defend" [9]. Unlike most Western countries, the test for incapacity to defend in Pakistan is not laid out in the CrPC 1898 [9].

Section 464 of CrPC 1898 states that when a magistrate holding an inquiry or a trial has "reason to believe that the accused is of unsound mind and consequently incapable of making his defense," the magistrate will facilitate an inquiry into the mental status of the accused [9]. Typically, at the direction of the provincial government, a medical doctor, such as the Civil Surgeon of the district, writes a report for judicial proceedings [9].

Section 465 of the CrPC 1898 states that if an accused is deemed to be of unsound mind, incapable of articulating a defence, and deemed incapable during a Court of Session or a High Court trial, then further proceedings would be postponed [9].

Section 466 of CrPC 1898 provides a procedure for the release of the mentally ill offender for nonbailable offences during investigation or trial. The magistrate would ensure that such individuals would be in a safe environment in which they are unable to harm themselves or others [9].

Not Criminally Responsible Disposition

Section 470 of CrPC 1898 stated that if a mentally ill offender is acquitted on "grounds of lunacy," then "the finding shall state specifically whether he committed the act or not." Similarly, section 471 of CrPC 1898 states that if it is mentioned that the mentally ill offender committed the alleged act, then the magistrate or court can "order such a person to be detained in safe custody in such place and manner as the Magistrate or Court thinks fit," unless the patient is not detained under the *Lunacy Act* 1912 [9]. It is interesting to note that the CrPC 1898 still refers to the outdated *Lunacy Act* 1912.

Qanun-e-Shahadat Order 1984

Rules and regulations related to legal evidence in Pakistani courts are codified in The

Qanun (Law)-*e*-*Shahadat* (Evidence) *Order* 1984 (QSO). This replaced the *Evidence Act* of 1872 [10]. The purpose was to harmonize legal evidentiary requirements with the injunctions of Islam according to the *Quran* and Sunnah (acts of the Prophet Muhammad, peace be upon him) [10].

Articles 59–65 of the QSO 1984 outline the role of expert witnesses, whose skills and judgment were sought out in the context of adjudicating certain crimes, such as those where the accused may be suffering from a mental disorder. According to the QSO 1984, the court can ask a medical professional, such as a psychiatrist with experience in forensic assessments, as an expert witness to give their opinion about the extent to which the accused was capable of appreciating the nature of the act committed or its moral wrongfulness at the time of the alleged crime [10]. Educating resident trainees on how to be an expert witness, and how to determine if a person is criminally responsible, capable and fit to stand trial are important if forensic psychiatry fellowships are to become a part of psychiatry residency training in Pakistan.

Juvenile Justice System Act 2018

Pakistan amended laws about youth who come into contact with the criminal justice system. The *Juvenile Justice System Order* 2000 was in effect until 2018 when changes were made to make way for the *Juvenile Justice System Act* (JJSA) 2018 [11]. The act specifies a procedure for the provision of safeguards in cases of juveniles, who are younger than 18 years of age. These individuals may have an immature understanding of the nature of their actions at the time of their offence. The law provides that the investigation in cases of juveniles will be completed with help from a social welfare officer [11]. The social welfare officer prepares a social investigation report to be included with the police report submitted to the court [11]. The social investigation report describes the juvenile's character, education, social and moral background, along with any evidence of the offence by the juvenile and the possibility of sending the juvenile to a juvenile rehabilitation centre or release on probation for their psychosocial treatment or psychotherapy [11]. The report also includes all legal and appropriate assistance provided to the juvenile for their understanding, concept and consequences [11].

JJSA 2018 also states that if a juvenile before the court is suffering from serious physical or mental illness, the court will send them to a hospital or a medical institution where treatment will be given to the juvenile at the expense of the state. This new law takes into consideration a juvenile's young, immature mind and supports the rehabilitation of these individuals into society when they commit criminal offences.

The Criminal Justice System of Pakistan

Police

The *Pakistan Police Order* of 2002 replaced the *Police Act* of 1861. It includes a set of roles and responsibilities for the Pakistani police. As part of their remit to manage those experiencing mental illness in the public, the *Police Order* 2002, Chapter II (responsibilities and duties of the police, section 4q,) directs the police to "take charge of lunatics at large to prevent them from causing harm to themselves or other members of the public and their property" [12]. However, as part of their training, there is no mention in the *Police Order* 2002 on police needing basic mental health training to triage those offenders as potentially having mental health problems, including juvenile offenders, and how to best manage this vulnerable group [12]. It is important for police to consult with mental health professionals to be well equipped to properly assess and care for mentally ill offenders. In the future, it would be valuable to build bridges between police, lawmakers, judiciary and mental health professionals to better care for mentally ill offenders.

In Pakistan, civil society and the state have made unprecedented efforts to promote a

preventive and reformative approach to justice. This has led to an increased awareness among justice actors—the police in particular—about the important role that forensic mental health plays in the justice process, how it contributes to rule of law, and how it may prevent reoffending.

Group Development Pakistan (GDP) is one of the civil society organizations that has been contributing to this slow but undeniable forensic mental health revolution in Pakistan. Since 2018, GDP has been training police officers who may deal with children in contact with the law. The capacity-building program provides police officers with adequate forensic communication skills to avoid secondary victimization of a child during the investigation process or while in detention, and enable the child to provide coerced-free evidence [13].

This process has been complemented by the establishment of 13 pilot child courts by the higher judiciary (with technical support from GDP and financial help from the British High Commission). These child courts have been designed and rehabilitated to provide a child-conducive environment in line with international child safeguarding standards. The judges, court staff, lawyers, and prosecutors in these child courts are also trained and coached on forensic communication to guarantee the child a gender-sensitive process, where the child will feel listened to, safe, and considered. The need to assess the child's psychological capacity to face trial or testify is also part of the training process.

This focus on forensic mental health for child and gender justice has created a multiplier effect. A juvenile police unit has been established in the northern city of Peshawar, Khyber Pakhtunkhwa in April 2021, while the police in the federal capital of Islamabad has created a gender protection unit to deal with those cases involving children. These specialized police units follow language and standard operating practices that recognize the specific needs of children and provide a physically and psychologically safe environment that will promote the rule of law and child justice in line with international child rights standards. These efforts in Pakistan have been acknowledged by the United Nations Special Rapporteur to the Secretary General on Violence Against Children, Dr. Najat Maalla M'jid. They underline the need to increasingly work at a cross-sectoral level, where justice actors collaborate with child protection specialists and forensic mental health experts [14].

The model piloted in Pakistan shows that positive change is possible. These structures led to increased efforts to keep children away from detention, improve access to justice for girls, unprecedented mobilization of justice actors to reform and protect children, and increased gender and child sensitive jurisprudence coming out of these courts.

Judiciary

In Pakistan's criminal justice system, lawyers and judges are essential in the provision of forensic psychiatric services. Where there is uncertainty about an offender's mental status at the time of the crime, the judge refers the case to a medical superintendent, which is then forwarded to the respective psychiatry department for a formal assessment. A committee will then examine the case and prepare a report. This report is based on the clinical assessment provided by an attending psychiatrist. The psychiatrist will determine if there is a clinical diagnosis and comment on the defendant's capacity and criminal responsibility at the time of the crime. The report is then forwarded to the medical superintendent of that institution, who then addresses the court with the findings of the committee. A forensic psychiatric assessment can be requested either directly by the court or through an application made to the court by the defence counsel.

Prison

For the mentally ill offender, postconviction sentencing is primarily concerned with confinement, with few resources available for treatment and rehabilitation. In some circumstances, the offender may be transferred to

a medical facility for treatment for part or all of their sentence under Part VI (removal of prisoners), section 30 of the *Prisoners Act* of 1900 [15]. In most central prisons, a separate block in the prison is designated for patients with comorbid psychiatric or behavioural problems. A postgraduate psychiatry trainee from a tertiary care facility interviews the patients on this block every week for the pupose of assessment and management. If the trainee has concerns, a senior consultant may perform their own independent assessment. Alternatively, the trainee, in consultation with a senior faculty member, may have a patient transferred to a tertiary care facility, in which a team of three senior consultants assesses the patient. A detailed assessment is subsequently forwarded to the sessions judge of the district judiciary as well as the prison authorities [16]. It is important for trainees to learn from senior consultants how to perform thorough assessments, so appropriate and timely consultations can take place. It would be useful for trainees to learn these strategies before conducting assessments.

There is no official systematic collection of data about the number of mentally ill people confined in Pakistan's prison system. Anecdotal evidence from mental health professionals working there suggests that psychiatric morbidity in prisons may be increasing. One study found 62.50% of female inmates to be suffering from psychiatric illnesses, 23.43% suffered from affective disorders and 10.15% from anxiety-related illnesses [17]. This study was conducted in a female prison. The data cannot be extrapolated to male inmates. Further study is needed for male inmates.

On October 1, 2017, all provincial home departments except in former Federally Administered Tribal Area shared official data about the prison population of Pakistan [18]. There were 84,287 Pakistani prisoners in 112 prisons when the authorized official capacity was 53,744 [18]. Prison occupancy rate was at 157% capacity [18]. The occupancy rate of prisoners was highest in Punjab at 168%, followed by Sindh at 155%. The data further revealed that 1,343 out of 84,287 prisoners (1.6%) were juveniles and 90% of the juvenile prisoners in prisons were under-trial prisoners [18].

Overcrowding in prisons has been associated with substandard and inhumane conditions of detention, including poor nutrition, insufficient water, inadequate accommodation, poor access to health care, lack of hygiene, barriers to family visitation, lack of staff, and safety and security concerns [18]. It is important to address overcrowding in prisons and the need for appropriate diversions to rehabilitation programs to avoid these negative outcomes.

Forensic Psychiatry: Provisions, Challenges and the Path Ahead

In 2015, Dr. Tariq Mahmood Hassan published the first comprehensive paper on forensic psychiatry in Pakistan. Since then, he has lectured at psychiatric conferences in Pakistan and to the judiciary in 2019 at the Islamabad High Court Bar Association. In 2019, on his recommendation, the Pakistan Psychiatric Society (PPS) agreed in principle to develop a forensic psychiatry section within the PPS. The section includes local and international Pakistani forensic psychiatrists [2]. This was officially confirmed by the then president of the PPS, Prof. Dr. Iqbal Afridi, on December 24, 2020.

New developments in the field of forensic psychiatry are essential as psychiatrists are under immense public pressure to assess the criminal responsibility of blasphemy offences. Section 295-B of the PPC 1860 forbids defiling the Quran and section 295-C of PPC 1860 forbids using derogatory remarks against the Prophet Muhammad (peace be upon him) [7]. These types of offences tend to receive the most international coverage when the accused is suspected of having a mental illness. In some cases, a fringe section of the public demand their own form of justice against the accused, which can have fatal consequences. According to the PPC 1860, there are no specific criteria for mentally ill offenders violating these Islamic laws [15]. Future challenges

to the current law will allow for clarification and possibly amending the current statute for the mentally ill offender.

The judiciary has yet to formalize and implement a mechanism to screen pretrial accused for mental illness. Capacity to defend and criminal responsibility assessments are rare and only happen in institutions where the psychiatrist has a sharp interest in the field and the local judiciary is open to changes in practice. Otherwise, the majority of work by psychiatrists in this field includes caring for the postconvicted mentally ill offender under the jurisdiction of the local prison authorities.

However, in February 2021, Pakistan's evolution in forensic psychiatry took a multigenerational leap forward. Ms. Safia Bano and others were appealing to the Supreme Court in Pakistan that certain legal procedures were not followed in trials taking into account their mental illness. In another case, but part of the same judgment, the concern of carrying out the death penalty on a mentally ill sentenced person was also brought up.

In their landmark judgment, the Supreme Court of Pakistan made numerous important decisions (19). The first line of the judgment states "the mental health of a person is as important and significant as his physical health." The first matter that was addressed was the definition of mental illness, avoiding narrow definitions and using the International Classification of Diseases, published by the World Health Organization.

Second, the Supreme Court directed that all terms like "unsound mind" should be replaced with "mental disorder" or "mental illness." Similarly, the term "lunatic" would also be substituted appropriately.

Third, the matter of a person's capacity to defend should be taken seriously, keeping in mind procedural fairness and due process guaranteed under the constitution and the law.

Fourth, once the court has formed a prima facie opinion that the accused may be incapable of making their defence, the court has a duty to seek a medical opinion by forming a medical board.

Fifth, court reports must not merely be a diagnosis but a detailed and structured account of the individual with specific reference to psychopathology.

Lastly, in the decision that made worldwide news, the Supreme Court of Pakistan set a new legal threshold on the criteria to execute the sentenced mentally ill person. In its judgment it states that "we hold that if a condemned prisoner, due to mental illness, is found unable to comprehend the rationale and reason behind his/her punishment, then carrying out the death sentence will not meet ends of justice." However, the court clarified that "not every mental illness shall automatically qualify from an exemption from carrying out the death sentence." It states that a medical board will make such clinical assessments to certify that the condemned prisoner no longer has the higher mental functions to appreciate the rationale and reasons behind the sentence of death awarded to them.

Conclusion

Pakistan is at a watershed moment where the disciplines of psychiatry and the law are beginning to build bridges. With greater cooperation among the police, judiciary, prison department, nongovernmental organizations, and psychiatry, the country can begin to gradually implement key processes to support mentally ill offenders. The existing liaison between the legal and psychiatric professions must be enhanced. The judiciary, police, and the psychiatric community need a process of ongoing education and training for their awareness and implementation of the legislation as it relates to the mentally ill offenders. More research, particularly epidemiological studies, will help better understand the scale of the problem at hand, both within and outside prisons.

The overall goal is to ensure protection of the public while safeguarding the dignity and

human rights of mentally ill offenders. International institutions can help by opening their doors to Pakistani FCPS graduates interested in gaining the necessary forensic competencies to develop this subspecialty. Pakistan's landmark Safia Bano judgment brings with it the weight of the law to ensure the rights of the mentally ill accused and sentenced persons are kept in the fore.

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References

1. Hussain F. *The Judicial System of Pakistan.* Islamabad: Federal Judicial Academy; 2015. https://www.supremecourt.gov.pk/downloads_judgements/all_downloads/Judicial_System_of_Pakistan/thejudicialsystemofPakistan.pdf.
2. College of Physicians and Surgeons Pakistan. Karachi: CPSP, n.d. https://www.cpsp.edu.pk.
3. Government of Pakistan. *Mental Health Ordinance*. Islamabad: Government of Pakistan Printing Press; 2001. http://punjablaws.gov.pk/laws/430a.html.
4. Tareen A, Tareen K. Mental health law in Pakistan. *British Journal of Psychiatry International*. 2016;13(3):67-69. https://www.cambridge.org/core/journals/bjpsych-international/article/mental-health-law-in-pakistan/92791134964FDEAA7FC6DAC02CAD6543.
5. *Sindh Mental Health Act,* 2013. http://www.pas.gov.pk/index.php/acts/details/en/31/237.
6. *The Sindh Mental Health Rules*. Karachi: Government of Sindh; 2014. http://sindhlaws.gov.pk/setup/publications_SindhCode/PUB-15-000271.pdf.
7. *Pakistan Penal Code*, Act XLV of 1860 (Updated on 06 May 2018). http://nasirlawsite.com/laws/ppc.htm.
8. UNCRC Committee's General Comment No. 24 (2019) on Children's Rights in the Child Justice System [adopted on September 18, 2019]. https://tbinternet.ohchr.org/Treaties/CRC/Shared%20Documents/1_Global/CRC_C_GC_24_8968_E.docx.
9. The Pakistan Code. *The Code of Criminal Procedures, 1898.* http://pakistancode.gov.pk/english/UY2FqaJw1-apaUY2Fqa-apea-sg-jjjjjjjjjjjj.
10. *Qanun-e-Shahadat Order*, 1984. https://punjabpolice.gov.pk/system/files/qanun-e-shahadat-order-1984.pdf.
11. Juvenile Justice System Act, 2018. http://www.na.gov.pk/uploads/documents/1519296948_886.pdf.
12. Government of Pakistan. *Police Order, 2002* (chief executive's order no. 22 of 2002). http://npb.gov.pk/wp-content/uploads/2014/08/police_order_2002.pdf.
13. Group Development Pakistan, American Bar Association. Representing child victims: training manual for legal aid lawyers. https://gdpakistan.org/wp-content/uploads/2021/04/Training-Manual-for-Legal-and-Lawyers.pdf.
14. Federal Ministry of Law and Justice, Terre des hommes Foundation, BackerMcKenzie, the office of the UNSRSG on VAC, Penal Reform International, International Association of Youth & Family Judges and Magistrates, et al. *National Preparatory Consultation on Justice with Children* (2021). https://gdpakistan.org/wp-content/uploads/2021/02/World-Congress-on-Justice-with-Children-Meeting-Notes-Jan_2021.pdf.
15. *The Prisoners' Act, 1900.* http://punjablaws.gov.pk/laws/17.html.
16. Hassan T, Nizami AT, Hirji S. Forensic psychiatry in Pakistan. *International Journal of Law and Psychiatry*. 2015;41:95-104. https://www.sciencedirect.com/science/article/abs/pii/S016025271500076X?via%3Dihub.
17. Bilal F, Saeed K. Psychiatric morbidity among the female inmates of District Jail Adyala, Rawalpindi. *Rawal Medical Journal*. 2011;36(2):129-132. https://www.ejmanager.com/mnstemps/27/27-1297006596.pdf?t=1570003627.

18. Cursor of Development and Education Pakistan, National Counter Terrorism Agency Pakistan, International Committee of the Red Cross. *Addressing overcrowding in prisons by reducing pre-conviction detention in Pakistan*. 2018. http://codepak.org/wp-content/uploads/2018/05/Addressing-overcrowding-in-prisons-by-reducing-pre-conviction-detention-in-Pakistan.pdf.

19. Supreme Court of Pakistan. In the Supreme Court of Pakistan (Review Jurisdiction) 2021. https://www.supremecourt.gov.pk/downloads_judgements/c.r.p._420_2016.pdf.

Corresponding author
Dr. Tariq Mahmood Hassan, Division of Forensic Psychiatry, Providence Care Hospital, 752 King St. West Kingston, ON K7L 4X3 Canada – email: hassant@providencecare.ca

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