Name of Tool	Youth Level of Service/Case Management Inventory 2.0 (YLS/CMI 2.0)
Category	Youth Assessment: General Risk (Validated)
Author / Publisher	Hoge and Andrews
Year	2011

Description

- The YLS/CMI 2.0 is a 42-item standardised inventory for use with male and female juveniles to assess the risk of future offending. The original YLS/CMI was used in on juvenile probationers in Canada and was updated to a 2.0 version using a normative sample of 17, 000 young individuals who had offended in 2011. The revised version expanded the age range to 12-18 years, added more non-criminogenic needs and responsivity considerations, and included new recommended cut-offs for risk/need levels.
- It assesses eight categories of risk factors associated with recidivism and need factors that assist in case management. Space to record narratives is also included to allow the assessor to record information like special circumstances that are not captured in the risk and needs factor items. Protective factors for the young person are also documented.
- Scoring of risk factors provides an estimate of the risk of reconviction for individuals over a 12-month period. Risk levels are classified as low, moderate, high or very high.
- Provides a profile of criminogenic needs. The authors of the tool caution that although the YLS/CMI can act as an aid to case management and planning, it is not designed to replace professional judgment.
- The authors note that in some circumstances, the assessor might feel that the level of risk/need is different from that provided by the YLS/CMI because of factors that are not represented in the ratings. In those situations, a 'professional override' measure might be used. This feature allows the assessor to provide their own risk level estimate based on the information they hold about the individual.

Age Appropriateness

12-18

Assessor Qualifications

Assessors should possess training and experience in youth assessment.

Strengths

- Meta-analyses of previous empirical research on the YLS/CMI indicated that it is useful in predicting recidivism in both males and females (Pusch and Holtfreter, 2018).
- The tool incorporates a case management section which can aid case planning and management. Its purpose is twofold in nature: recidivism predictions; addressing programming and service needs

(Anderson et al., 2016). For example, if a young person scores as high risk on the education subscale, this denotes that additional services should target this area (Barnes et al., 2016).
- The empirical evidence for the YLS/CMI 2.0 has been derived from the LSI-R.
- Measures dynamic variables as well as static ones. This allows for the assessment of change in risk level and also informs intervention needs and targets (Yates, 2005).
- The tool considers vulnerability, care and risk of harm factors, such as marital conflict within the family, poor social skills, victim of bullying, etc.
- Can be used by a variety of professionals with the relevant training to administer and score the assessment.
- Can be less time-consuming to complete than other risk assessments such as the ASSET (Burman et al., 2007).
- Vaswani (2013) found it was a good predictor of reoffending for both males and females. The authors explained that education, employment, family and circumstances/planning items may be scored as female specific factors to aid with case management (Hoge and Andrews, 2011).

Empirical Grounding

- Andrew and Bonta's (1994) 'Psychology of Criminal Conduct' framework advances individual personality items and social circumstances considered to be indicative of recidivism. These factors are known as the 'Central Eight' and form the basis of the eight items measured in the YLS/CMI (Cuervo and Vilanueva 2018).
- The authors of the YLS/CMI maintain that the tool fits the 'Risk-Needs-Responsivity' model (see Andrews et al., 2011), by giving an insight into the risks and needs of individuals and choosing the most appropriate treatment options for them.
- The tool is derived from LSI-R. Studies examining the psychometric properties of the YLS/CMI are presented in the manual (Hoge and Andrews, 2003).
- The YLS/CMI was further developed on the basis of consultation with experienced probation officers and juvenile justice professionals in order to ensure the utility of the measure (Hoge and Andrews, 2003).

Inter-Rater Reliability									
a) UK Research	• Rennie and Dolan (2010) found excellent inter-rater reliability for the YLS/CMI (ICC =.95).
b) International Research	• Onifade et al. (2008a) found excellent levels of agreement in the scoring of this instrument (90%). Following training, the inter-rater reliability exceeded 90%. • Schmidt et al. (2006) found moderate to large inter-rater reliability values for the separate subscales of the YLS/CMI. • Vieira et al (2009) reported very high (.98) inter-rater reliability.

	• Welsh et al. (2008) found good ICC value for the YLS/CMI composite score (.72). ranging from .61 for the peer relations subscale to .85 for education and employment subscale. • Latessa et al. (2016) found that inter-rater reliability was acceptable for the Total Risk Score at 0.77; however, this fell below acceptable Kappa standards to 0.53 for the Overall Risk Level. • Testing the YLS/CMI on 254 justice-involved youths of both genders found that the total score generated acceptable inter-rater reliability at .77 (Scott, Brown and Skilling, 2019).

Validation History

General Predictive Accuracy	
a) UK Research	• Olver, Stockdale and Wong (2012) – the YLS/CMI achieved moderate to high accuracy in predicting both youth and adult recidivism (i.e. general, non-violent and violent recidivism) in a sample of male youths with AUC values ranging between 69. and .85. • Marshall et al. (2006) found moderate AUC values across three offending behaviours: recorded incidents of violence (.61), number of charges and convictions (.71) and assaults (.67). • A study of the YLS/CMI in Scotland found that the AUCs generated for general recidivism were 0.72 and 0.73 for males and females respectively. The AUCs for serious violence were 0.66 for males and 0.69 for females, suggesting that the tool is more accurate in predicting general recidivism (Vaswani, 2013). • Rennie and Dolan (2010) examined males in England and found that the instrument gave significant predictions of non-violent and any recidivism. The AUC from the risk category was found to be greater at predicting general recidivism than the total score. The authors did surmise, however, that the homogeneity of the sample could have resulted in restricted scores and thus be affecting the predictive accuracy. • Vaswani and Merone (2012) examined 1138 YLS/CMI assessments in Scotland. The composite score achieved moderate to high AUC values in predicting 'any' (.73) and 'serious violent' recidivism (.68) in a sample of male

	Scottish youth. Results indicated that the tool was also a good predictor for the occurrence, speed and volume of reoffending for males and females. The AUCs for total scores were .73 and .72 for males and females respectively. For males and females in the risk/needs category the score were .68 and .69 respectively.
b) International Research	• Chu et al. (2016) found total scores significantly predicted general recidivism for both male and female youth in a Singapore study. • McGrath and Thompson (2012) - in a one-year follow-up the the YLS/CMI obtained an AUC value of .65 for any re-offence in a sample of Australian youth. • Olver, Stockdale and Wormith (2009) - moderate correlation found between the YLS/CMI score and general recidivism (r = .32). • Onifade, et al. (2008a) found that the YLS/CMI correctly classified 59% of individuals as either recidivists or non-recidivists. • Salekin (2008) found moderate ROC values of .66 and .64 for general and violent recidivism in a sample of male and female adolescents. • Stockdale (2008) found large ROC values of .79 for general recidivism and .78 for violent recidivism. • Vieira et al. (2009) reported that youths who had less than a third of their identified criminogenic needs met were eighteen times more likely to reoffend in a three year follow up period in comparison to youths for whom the majority of their needs were met. • Viljoen et al. (2009) - the YLS/CMI composite score appeared to have moderate predictive accuracy for non-sexual violent reoffending (.68), any violent reoffending (.61) and 'any' reoffending (.66). • After carrying out AUC analyses, Latessa et al. (2016) found that the YLS/CMI did not predict youth recidivism much better than chance for the overall sample and the sample divided up by gender. • In a sample of 254 youth, Scott, Brown and Skilling (2019) found that the YLS/CMI total risk score was .68 and the total strength score yielded smaller effects at .59.

Validation History	
Applicability: Females	██ ██ ██ ██ ██ ██ ██ ██ ██
a) UK Research	• Vaswani and Merone (2012) - the composite score achieved moderate to high AUC values in predicting 'any' (.72) and 'serious violent' recidivism (.69) in a sample of female Scottish youth. • Marshall et al. (2006) - the YLS/CMI demonstrated moderate correlations with the number of charges and convictions (r = .32) and assaults (r =.40) in a sample of females.
b) International Research	• Olver, Stockdale and Wong (2012) observed moderate to high accuracy in predicting both youth and adult recidivism (i.e. general, non-violent and violent recidivism) in a sample of female youth with AUC values ranging between 65. and .75. • Bechtel, Lowenkamp and Latessa (2007) - small correlations observed between the composite score and recidivism in the total female sample (r = .17); however, in community samples, no significant correlations were found. • A study into juveniles in a Spanish province using a translated version of the YLS/CMI found that gender played a significant role in affecting recidivism risk levels: females assessed by the YLS/CMI as having a low risk level had a higher risk of recidivism than boys (Jara, García-Gomis and Villanueva, 2016). • Anderson et al. (2016) claimed that predictive validity of the tool is affected by gender with AUCs of .623 and .565 for boys and girls respectively. In their study, it was found that only the family and personality subscales significantly predicted recidivism for girls compared to all the subscales for boys. • Using a sample of 440 juveniles in Australia, McGrath, Thompson and Goodman-Delahunty (2018) tested the predictive validity of the Australian adaption of the tool, YLS/CMI-AA (Hoge and Andrews, 1995). Predictive accuracy differed by gender, with AUCs of .694 and .667 generated for males in relation to general and violence recidivism respectively. An AUC of .690 was yielded for general recidivism in females; whilst the AUC for violence recidivism was higher than males at .725.

| | •Taylor (2018) carried out statistical analyses on 1679 youth looking at various social factors, including gender. It was discovered that females demonstrated significantly higher needs on the personality/behaviour and family circumstances/parenting subcomponents compared to males, indicating that strained and stressed family relationships are a significant area of risk and need for females offending.

•The YLS/CMI total risk score showed good predictive accuracy for males and females, with AUCs of .68 for both genders. The total strength score was found to yield a smaller effect for males at .60 compared to .69 for females (Scott, Brown and Skilling, 2019). |
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Validation History

Applicability: Ethnic Minorities	■ ■ ■ ■ ■ ■ ☐ ☐ ☐
a) UK Research	None available at present.
b) International Research	•A study by the *National Council on Crime and Delinquency* in the United States found the YLS/CMI did not perform as well for Black/African Americans and Hispanic/Latinos (Baird et al., 2013).

•After an examination of 334 YLS/CMI assessments, Perrault et al. (2017) found that race was not a significant factor in predict reoffending; although Black youth did score higher on the official juvenile history scale than White young people.

•A study found that Spaniards to indicated a higher level of reoffending than ethnic minorities in the follow-up period. Protective factors, however, negated risk factors across different ethnic groups. To that end, when a youth possessed protective factors, their nationality no longer had an impact on their reoffending (Cuervo and Villanueva, 2018).

•Olver, Stockdale and Wong (2012) - observed moderate accuracy in predicting both youth and adult recidivism (i.e. general, non-violent and violent recidivism) in a sample of Aboriginal youth with AUC values ranging between .62 and .67.

•Chu et al. (2012) - in a sample of 165 male youths from Singapore, higher mean scores on the YLS/CMI were |

	observed among individuals affiliated to gangs compared to those who were not affiliated to gangs.

•Onifade et al. (2009) found no significant differences in the predictive validity of the YLS/CMI between racial groups (Caucasian AUC = .66 versus African American AUC = .63).

•Onifade, et al. (2008b) - the tool achieved 60% accuracy in identifying recidivists and non-recidivists in an African-American sample of males. .

•Bechtel, Lowenkamp and Latessa (2007) - small correlations observed between the composite score and recidivism of non-White individuals in community (r= .23) and institutionalised (r =.10).

•McGrath, Thompson and Goodman-Delahunty (2018) utilised a sample of 440 juveniles in Australia to test differences within ethnic subgroups using the Australian adaption of the YLS/CMI. For general recidivism, AUCs were generated of .648, .684 and .716 for indigenous, non-indigenous and ethnic groups respectively. There were similar findings for violence recidivism: indigenous, .623; non-indigenous, .668; ethnic, .715.

•Villanueva and colleagues (2019) administered a Spanish translation of the YLS/CMI to young Spanish individuals, 116 of which were Arab and 140 who were non-Arab. With the inclusion of subtle cultural differences, AUCs of .73 and .76 were generated for the Arab and non-Arab groups respectively. To that end, the YLS/CMI was able to predict the correct outcomes for 73.7% of Arab and 75.9% of non-Arab minor individuals respectively. |

Validation History

Applicability: Mental Disorders										

a) UK Research	•Rennie and Dolan (2010) found that recidivists attained higher scores than non-recidivists on their past and current offending. The YLS/CMI generated AUCs of .60, .66 and .67 for violent, non-violent and 'any' recidivism respectively in a sample of mentally disordered males.
b) International Research	•McLachlan et al. (2018) examined the predictive validity of the YLS/CMI to measure recidivism in 100 youth: half of the sample had 'foetal alcohol spectrum disorder' (FASD); the other half did not have FASD or prenatal

	alcohol exposure. Results showed the YLS/CMI was able to predict recidivism in youth with FASD; although this group was rated at higher risk across all risk ratings, suggesting a high level of risk and intervention need.

Contribution to Risk Practice

- The YLS/CMI can aid assessors in identifying risk, responsivity and protective factors specific to the individual.
- The dynamic factors included in the YLS/CMI can act as targets for change.
- The tool can contribute towards measuring progress or deterioration in factors related to the individual's level of risk.
- Information obtained from this tool can contribute to risk management strategies.
- Regression analyses found the best predictors of recidivism in the tool were the following risk factors: school or employment problems, criminal friends and personality behaviour (Cuervo and Villanueva, 2018).
- The YLS/CMI seems to be neutral in terms of gender and race/ethnicity (Barnes et al., 2016).
- The authors recommend that YLS/CMI measurements are updated every six months to capture the dynamic nature of youth development.

Other Considerations

- Baird et al. (2013) had a few criticisms of a couple of the items within the YLS/CMI. The 'could make better use of time' factor within the leisure/recreation domain is said to be a subjective item that is difficult to reliably score. Within the substance abuse item, there are options to check for 'occasional drug use' and 'chronic drug use,' which would appear to be mutually exclusive. In spite of this, both of these are to be selected when chronic drug use is checked. This is something which always happens in automated versions of the YLS/CMI; yet, it is not consistently applied when the scoring is carried out manually by assessors, something which leads to scoring errors. For instance, in Nebraska commitment cases, workers neglected to comply with this rule in 12.3% of cases.
- Vaswani (2013) found that when the YLS/CMI was used with people aged over 18 is yielded no statistical significance; hence, it was not very accurate in predicting reoffending. It is, thus, recommended that the tool is not used with those aged 18 and over and that the adult version of the tool is instead used (Vaswani and Merone, 2012).
- Several studies found that usage of the professional override function reduced the accuracy of the YLS/CMI to predict general recidivism, particularly in serious violence cases. For instance, the AUC for serious violence recidivism was .68 when using the YLS/CMI; this was then reduced to an AUC of .54 when the professional override was used (Vaswani and Merone, 2012). Based on this, it is advised that the 'professional override' function should be used with extreme caution (Schmidt et al., 2016; Vaswani ,2013).
- Campbell et al. (2014) explored the use of a reduced item YLS/CMI as a brief screener with positive results. In the course of their study, the YLS was confirmed to be gender neutral.
- Qualitative analysis by Burman and colleagues (2007) highlighted the limitations of the YLS/CMI in relation to its inability to discern the type and severity of offending behaviours and the lack of a separate 'Risk of Harm' Section.
- A meta-analysis conducted by Schwalbe (2008) on a number of youth risk assessment tools found small differences in effect sizes for the YLS/CMI between males and females. The author suggests that gender differences observed in individual studies, may evidence '...gender biases in juvenile

justice decision-making and case processing rather than for the ineffectiveness of risk assessment with female offenders…' ([Schwalbe, 2008: 1367)](#).

• The revised version (YLS/CMI 2.0; Hoge & Andrews, 2010) has been published and contains important new developments which include but are not limited to the following: (1) new recommended cut-off scores for different risk/need levels; (2) expanded age range (12-18); (3) inclusion of items addressing gender-informed responsivity factors like pregnancy/motherhood.

• The scoring of the 'Total Risk/Need Score and the eight subcomponents of Part I (Assessment of Risks and Needs) remains unchanged from the YLS/CMI (Hoge and Andrews, 2010: 3).

• An online version is available through the distributors – MHS.For more information on the YLS/CMI 2.0 visit:

http://www.mhs.com/product.aspx?gr=safandprod=yls-cmi2andid=overview