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Young People - Social Problem-Solving Skills: Development and psychometric properties

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Abstract

There is a lack of culturally suitable tools to measure social problem-solving skills among young people in Malaysia. Hence, this study was conducted to determine the reliability and validity of our newly invented 14-item Young People-Social Problem-Solving Skills (YP-SPSS) questionnaire. Cronbach's alpha analysis shows that YP-SPSS has good reliability ($\alpha=0.7640$), and the factor loadings for the fourteen items are above 0.5. Exploratory Factor Analysis suggests four factors: emotional awareness, insight into having problems, steps in solving problems, and analyzing the problems. The study shows that this questionnaire is statistically suitable to measure the social problem-solving of young people.

Keywords: Malay; social problems; problem-solving; questionnaire

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1.0 Introduction

Social problems among young people in Malaysia are severe public concerns. Worrying behaviours such as drug addiction, premarital sex, and infant abandonment continue to occur, resulting in detrimental consequences. According to the National Anti-Drug Agency, a total of 103760 drug addicts were reported by Mac 2023, of which about 59.6% are young people aged 19 to 39 years (National Anti-Drug Agency, 2023). Social non-conforming activities such as premarital sex, which lead to teenage pregnancy and illegal infant abandonment, prevent young people from continuing their academic achievement and expose them to unemployment and subsequent social problems (Mansor et al., 2022). Every year, 84 cases of illegal infant abandonment occur in Malaysia, and the rates do not seem to reduce (Mansor et al., 2022; Razali et al., 2014). Indeed, various factors predispose young people to engage in socially ill activities, and several interventions have been implemented. From instilling knowledge through sexuality education and religious advice to

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punishment and enforcement for deterrence (Ismail et al., 2022; Mansor et al., 2022; Razali et al., 2017). However, these damaging social phenomena continue to occur, resulting in damaging consequences.

Despite the overwhelming cases of social problems among young people in this country, there is a lack of investigations on other possible factors that underpin the genesis of the problems. In particular, there is a lack of data on the basic psychological skills required by young people to manage their stress appropriately. Social problem-solving skills are crucial for them to appropriately handle their stress and prevent them from various social problems. Hence, a brief tool to measure the social problem-solving skills of young people in this country was developed and its reliability and validity were investigated. Hopefully, this newly invented questionnaire can be widely used to assess the level of social problem-solving skills among young people. Subsequently, this work can inform authorities for effective management to curb social problems among young people.

2.0 Literature Review

2.1 Psychological theories related to social problem-solving

2.1.2 Executive function

The prefrontal cortex is a part of the brain crucial for executive function (planning strategies, decision-making, judgment, inhibition and emotional regulation) (Miguel et al., 2023). Despite its fundamental role in controlling behaviours and interaction with others, the maturation of the prefrontal cortex is not complete until near the age of 25 years (Arain et al., 2013). Hence, it is unsurprising that young people have difficulty properly managing their social lives. This is more prominent among those in unsupportive, stressful or violent environments (Navalta et al., 2018). Hence, for young people to properly manage their stress or social problems, parents and teachers should teach a few psychological skills from their early childhood life. These include emotional regulation, coping skills and social problem-solving skills that are fundamental for managing social problems.

2.1.2 Emotional Awareness

Emotional awareness is crucial for emotional regulation (D'Amico & Geraci, 2023). Given that problems or stress can trigger emotional changes, self-awareness of one's emotional changes and insight into having the problems are crucial as the earlier steps for problem-solving. Emotional awareness is also part of emotional intelligence, which is crucial as the first step of managing emotion, wise reasoning and subsequent behaviours (Schneider et al., 2023). Young people should recognise the changes in their emotions resulting from the failure to solve the problems to prevent further emotional dysregulation.

2.1.3 Insight of Having Problems

Insight is understanding and awareness, core elements of creative thinking and problem-solving (Tulver et al., 2023). Insight of having problems is one of the pivotal steps before one can solve his or her problems (Dominowski & Dallob, 1995). In detail, insight comes as a form of understanding of a problem and its solution that is associated with the process of restructuring thoughts, a change in perception of the problem situation and the influence of the structure of a problem situation (Dominowski & Dallob, 1995).

2.1.4 Social problem-solving

The crucial psychological skill required for problem-solving is the steps and methods to solve the problems. The popular IDEAL formula for problem-solving was developed by Bransford, Sherwood, Vye, and Rieser (1986). This formula suggested the importance of Identifying (I) the problems, defining (D) each problem that one has, exploring (E) the ways of solving the problems, acting (A) on the steps of solving problems to achieve the solutions, and looking back (L) at the steps that have been taken for evaluation.

2.2 Integrated Approach for Social Problem-Solving Skills

2.2.1 The Philanthropy Social Work

Our initial social work visiting young people in sheltered homes, schools and prisons (Hamizi et al., 2019; Razali, 2017; Razali et al., 2021; Razali et al., 2019; Razali et al., 2021) made us realise the importance of emotional awareness, insight of having problems and social problem-solving skills in managing stress and difficulties among young people. Moreover, informed by our experience as mental health professionals managing and researching vulnerable young people with mental health and social problems, we enhanced the IDEAL formula by adding up emotional awareness and insight of having problems. We use these integrated elements when giving counselling to young people who are involved with premarital sex, teenage pregnancy, drug addiction and many other social problems.

2.2.2 Development of integrated psychological skills: SELESAI module.

Integrating the triad of emotional awareness, insight of having problems and social problem-solving skills, we developed a module called SELESAI (Razali & Jaris, 2022)(refer to Table 1). "Selesai" is a Malay term that signifies the resolution of a situation. This module encompasses seven stages of the "S-E-L-E-S-A-I" process for effective problem-solving. The initial and foundational step in problem-solving involves recognising and acknowledging the existence of an issue. By having insight of having a problem and acknowledging the presence of a problem, one becomes aware of the necessity to address it. Subsequently, having emotional awareness and a composed and clear state of mind can be attained by applying relaxation techniques. One is ready to engage with the core social problem-solving technique when a sense of calm is achieved. Once relaxed, one is encouraged to create a comprehensive list of the challenges s/he faces. This act of listing the problems serves as a means of unburdening the mind. At this point, we recommend that

the client seek support from others rather than attempting to manage difficulties in isolation, recognising the inherent challenges in dealing with problems alone. Moving on to the fifth step, the client must assess each problem's severity and urgency before proposing potential solutions. The problems are then categorised based on their urgency and priority. Following this, one should evaluate the pros and cons of the proposed solutions. After careful consideration, a decision can be reached. Ultimately, there comes a vital realisation and acceptance that the chosen action represents a sound decision. This module has been delivered through online and face-to-face methods. We are currently assessing the effectiveness of the mode of delivery (Jaris et al., 2022).

Table 1: The step-by-step ways of social problem-solving skills integrated into the SELESAL Module

The Formula	The Steps of Social Problem-Solving according to the SELESAL Module
S	<i>Sedar bahawa "saya ada masalah"</i> Aware and admit that the client is experiencing a problem
E	<i>Elakkan stress dan lapangkan fikiran</i> Calm down before making any decision
L	<i>List atau senaraikan masalah yang ada</i> List all the problems on paper to channel out all the mental stress.
E	<i>Elok kiranya ada yang membantu</i> Seek for help or consultation from others
S	<i>Susun supaya perkara penting didahulukan</i> Arrange the problem based on the severity and urgency, and need to think about the solutions for every problem.
A	<i>Analisa baik buruk langkah yang diambil</i> Analyse the possible implications of the potential solution and take action to solve the problem.
I	<i>Nilah keputusan yang bijak dan tepat (Berserah kepada Ilahi)</i> Seek guidance from the God that the client has made the best decision

2.3 Young People - Social Problem-Solving Skills (YP-SPSS)

Based on the SELESAL module and given the importance of emotional awareness, insight into having problems and social problem-solving skills, we have invented the Young People Social Problem-Solving Skills (YP-SPSS) questionnaires (refer to Table 2). To enhance further its suitability to be used in the population of young Malay people, we prepared the YP-SPSS in *Bahasa Malaysia*. Responses to all items are assessed using a 6-Likert score with scales ranging from one, which indicates "very rare," to a score of six, which means "very frequent". Reverse scoring is required for items 4,8,9,10,12, and 14.

Table 2: Items for the Young People – Social Problem-Solving Skills

Question(Q)	Items for the Young People – Social Problem-Solving Skills
Q1	<i>Saya sedar bahawa saya mempunyai masalah</i>
Q2	<i>Saya memohon bantuan orang lain untuk selesaikan masalah</i>
Q3	<i>Saya selesaikan satu-persatu masalah yang saya hadapi</i>
Q4	<i>Saya sentiasa rasa cemas dan risau</i>
Q5	<i>Saya pasti saya pilih cara terbaik untuk selesaikan masalah</i>
Q6	<i>Saya memikirkan buruk atau baik langkah yang diambil</i>
Q7	<i>Saya boleh merasa tenteram dengan menenangkan diri sendiri</i>
Q8	<i>Saya cepat mencari jalan penyelesaian tanpa berfikir panjang</i>
Q9	<i>Saya rasa berserabut dengan banyak masalah</i>
Q10	<i>Saya rasa saya patut selesaikannya sendiri</i>
Q11	<i>Saya selesaikan masalah yang penting dahulu</i>
Q12	<i>Saya rasa tidak mampu selesaikan masalah</i>
Q13	<i>Saya selesaikan masalah mengikut apa yang saya rasa perlu dahulu</i>
Q14	<i>Saya berkata pada diri sendiri yang saya sebenarnya tiada masalah</i>

2.4 Evaluation of Properties

The quality of an determined by its reliability, both of but essential

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instrument is validity and which are distinct criteria.

2.4.1 Validity of an instrument

Validity assesses the extent to which the instrument accurately measures the construct it is intended to measure (Goretzko & Bühner, 2022) and accurately captures the true meaning of the concepts under investigation (Howard, 2023). Validity ensures that data collected by the instrument are relevant and truthful and that the conclusions drawn from the data are meaningful and valuable to the research objectives (Howard, 2023; Watkins, 2018).

Exploratory Factor Analysis (EFA) has been widely used to determine the validity of a questionnaire (Goretzko & Bühner, 2022; Howard, 2023; Watkins, 2018). EFA can explore the underlying structure or latent factors and organise the questionnaire into particular constructs (Goretzko & Bühner, 2022; Howard, 2023; Watkins, 2018). The goal was to identify common factors explaining the questionnaire items' relationships (Goretzko & Bühner, 2022; Howard, 2023; Watkins, 2018).

2.4.2 Reliability of an instrument

Reliability refers to the consistency and stability of an instrument. It assesses the extent to which a particular tool is able to produce consistent outcomes when applied repeatedly under the same or similar conditions (Barbera et al., 2020; Kennedy, 2022). Cronbach's alpha is commonly used to assess instruments' reliability or internal consistency, with values ranging from zero ($\alpha=0$) to one ($\alpha=1$). Higher alpha values indicate more excellent reliability. A good reliability index for an instrument is an alpha value of 0.70 or higher (Barbera et al., 2020; Kennedy, 2022).

3.0 Methodology

3.1 Aims and Objectives

Practical social problem-solving skills are essential for young people to alleviate stress and enhance their ability to navigate the complexities of daily life effectively (Treffinger et al., 2020). Addressing the gap of limited culturally appropriate instruments for Malay-speaking individuals, this study aimed to develop a relevant and culturally appropriate psychometric tool to measure the social problem-solving skills of young people and explore its validity and reliability. The objective of this study is to determine the reliability and validity of the Young People – Social Problem-Solving Skills (YP-SPSS) questionnaire.

3.2 Sampling and Sample Size

The sample size calculation is based on the Variable Ratio, which is referred to as the N:p ratio; N refers to the number of participants, and p refers to the number of items studied. The YP-SPSS questionnaire contains 14 items, and we used the N:p ratio of 5:1. This ratio follows the recommended ratio, which ranges from 3:1 to 20:1 (Hogarty et al., 2005; Watkins, 2018). Therefore, the minimum sample size required is 70 participants. Considering the attrition rate of 10%, data collection required a minimum of 77 participants. However, the final total number of samples (90 participants) exceeded the minimum requirement and was still within the acceptable ratio. Convenient sampling was used as a sampling strategy.

3.3 Data Collection

This study was a cross-sectional survey of students at a public university in Selangor, Malaysia. All participants were given a Participants Information Sheet and consent form. The selection criteria include young people aged 18 to 25 who can speak and understand the Malay language. Potential participants were given 10 minutes to read and understand the study instructions. Those who fulfilled the selection criteria and gave informed consent were enrolled in the study.

3.4 Data analysis

3.4.1 Reliability

The reliability of YP-SPSS is assessed using the Cronbach alpha coefficient.

3.4.2 Validity

The validity of the YP-SPSS is assessed using the Exploratory Factor Analysis (EFA) because there is inadequate prior knowledge of how the variables are related.

- *Suitability for factor analysis*

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity and Measure of Sampling Adequacy are used to assess the suitability of the data for factor analysis. The KMO examines the strength of the partial correlation, which indicates how the factors explain each other between the variables. A KMO value of more than 0.5 is considered suitable for factor analysis. Bartlett's Test of Sphericity and Measure of Sampling Adequacy is used to test the null hypothesis that the correlation matrix is an identity matrix. A significant statistical test of less than 0.05 is considered to reject the null hypothesis.

- *Factor extraction*

In order to simplify the factor structure of a group of items, Principal Components Analysis (PCA) is used to extract factors. The extraction rules used include Kaiser's criteria (eigenvalue > 1 rule), the Scree test and the cumulative percentage of variance extracted.

- *Rotational method*

It is assumed that the factors are uncorrelated. Hence, the popular orthogonal rotation methods using the Varimax with Kaiser Normalization are used.

4.0 Results

A total of 90 young people aged between 20 and 24 years old (mean±SD=21.81±0.78 years) participated in the study. The Cronbach's alpha test shows that the overall score was 0.764, indicating good reliability of the items in the instrument.

For the validity test, the statistical analyses using the EFA, the Principal Component Analysis (PCA) results from Bartlett's Test of Sphericity indicate that variables are correlated [$\chi^2(91)=383.26; p<.000$]. The KMO Measure of Sampling Adequacy value is 0.71, indicating average partial correlation and the degree of information among the variables overlap moderately.

Using a rule for extracting factors, the Scree Plot (Figure 1) and eigenvalue greater than 1, four (4) factors were extracted, explaining 27.10%, 16.04%, 11.30% and 7.79% variance in all 14 variables (Table 3).

Table 4 shows the findings of the newly developed factors of YP-SPSS. After rotation using Varimax with Kaiser Normalization totalling 62.22% of variance explained by four (4) factors. Q 1, Q 2 and Q12 were loaded to Factor 1 (loadings were 0.708, 0.712 and 0.534, respectively). The following were loaded on Factor 2: Q4, Q8, Q 9 and Q14 (loadings were 0.729, 0.543, 0.714 and 0.598). Further items were loaded on Factor 3, including Q7, Q10, Q11 and Q13 (loadings were 0.624, 0.709, 0.692 and 0.774, respectively). Moreover, Q3, Q5 and Q6 were loaded on Factor 4 (loadings were 0.552, 0.853 and 0.765, respectively). No item is cross-loaded. The YP-SPSS four factors are: i) emotional awareness (Factor 1), ii) insight of having problems (Factor 2), iii) steps in solving problems (Factor 3), and iv) analysing the problems (Factor 4).

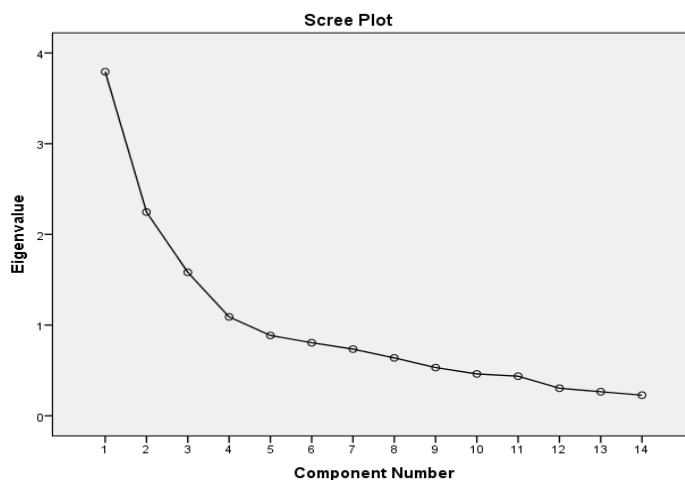


Fig 1: The Scree Plot

Table 3: Total Variance Explained, Initial Eigenvalues and Loadings

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.794	27.096	27.096	3.794	27.096	27.096	2.393	17.090	17.090
2	2.245	16.039	43.135	2.245	16.039	43.135	2.228	15.917	33.007
3	1.582	11.300	54.435	1.582	11.300	54.435	2.163	15.448	48.455
4	1.090	7.787	62.222	1.090	7.787	62.222	1.927	13.768	62.222

Note: Extraction Method: Principal Component Analysis.

Table 4: The Four Factors of YP-SPSS

YP-SPSS Items	Factor			
	1	2	3	4
Q1	.708			
Q2	.712			
Q12	.534			
Q4		.729		
Q8		.543		
Q9		.714		
Q14		.598		
Q7			.624	
Q10			.709	
Q11			.692	
Q13			.774	
Q3				.552
Q5				.853
Q6				.765

Notes: The YP-SPSS four factors are: i) emotional awareness (factor 1), ii) insight of having problems, factor 2), iii) steps in solving problems (factor 3), and iv) analysing the problems (factor 4).

5.0 Discussion

To the best of our knowledge, this is the first assessment tool designed to evaluate social problem-solving skills within a cultural context suitable for young individuals in Malaysia. Informed by the feedback during the visits to young people in sheltered homes, schools and prisons (Hamizi et al., 2019; Razali, 2017; Razali, Daud et al., 2021; Razali et al., 2019; Razali, Sham et al., 2021), our routine daily experiences, and expertise as clinicians and mental health professionals treating young people with mental health and social problems, we invented the SELESAI module and a new tool assessing social problem-solving skills of young people, the YP-SPSS. It is a 14-item self-rated questionnaire that comprises four factors: i) emotional awareness, ii) insight into having problems, iii) steps in solving problems, and iv) analysing the problems. These four fundamental constructs are products of integration between the psychological elements of emotional awareness, insights and social problem-solving skills. Through appropriate advanced statistical analyses, YP-

SPSS has been shown to enhance the landmark formula (IDEAL) of social problem-solving skills (Bransford et al., 1986) and aligns with contemporary psychological theories (D'Amico & Geraci, 2023; Dominowski & Dallob, 1995; Tulver et al., 2023).

In comparison, a neighbouring country has developed a Social Problem-Solving Test (SPST), primarily tailored for adolescents aged eight to eleven years. Their tool measures social cognitive-affective aspects, specific-problem-definition skills, and fundamental problem-solving capabilities as expressed by children in their language (Nguyen et al., 2021). Unlike other popular IDEAL-alike formulas which are used in Training Express (2023), Annolovo Groups (2022) and Indeed (2023), our SELESAI modules, which can be assessed using YP-SPSS emphasise the initial steps of two crucial psychological skills of emotional awareness and insight of having problems. These two elements are the foundations for emotional intelligence, emotional regulation, creative thinking and problem-solving (D'Amico & Geraci, 2023; Dominowski & Dallob, 1995; Tulver et al., 2023).

5.1 Significance of the Study

The YP-SPSS represents a pioneering effort to create a psychometrically sound tool that aligns with the cultural context of Malaysia and other Malay-speaking regions in assessing social problem-solving skills among young people.

5.2 Limitations and Suggestions

Limitations of this study include potential sample representation bias and limited generalisability to other linguistic or cultural groups. Future research could explore test-retest reliability and concurrent validity. Further work is needed to test YP-SPSS among young people involved with social problems such as drug addiction, premarital sex, teenage pregnancy and other socially ill behaviours.

5.3 Implications

The YP-SPSS offers a culturally sensitive tool for researchers to accurately assess social problem-solving skills among Malay-speaking young people. Practitioners can use it to identify individuals in need of targeted interventions. This questionnaire can be used to measure social problem-solving skills among young people.

6.0 Conclusion

The YP-SPSS is a reliable and valid questionnaire to measure social problem-solving among young Malay people. Its psychometric properties and cultural relevance make it a valuable asset for researching young people involved in social problems and non-conforming social behaviours. Future studies can explore its applications across diverse settings, unlocking its potential to enhance problem-solving capabilities among Malay-speaking young people.

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Paper Contribution to Related Field of Study

This paper provides empirical evidence on the reliability and validity of YP-SPSS, a newly invented questionnaire measuring the social problem-solving skills of young people. It can be used locally to evaluate the ability of local young people to solve their problems. It bridges the gaps of limited psychological tools in the fraternity of psychology, psychiatry and behavioural sciences to assess such fundamental psychological skills.

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