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Understanding the associations between Psychological Mindedness and Social Perspective Taking in Young People

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Abstract: Previous literature suggests that Psychological Mindedness (PM) and Social Perspective Taking (SPT) contribute to an enhanced performance in the mental health profession. This study was set to examine the associations between PM and SPT. An online questionnaire was developed using the Balanced Index of Psychological Mindedness (BIPM) and two adapted versions to measure other people's PM (PM about others) and PM about thoughts and behaviours. With regard to SPT, a reduced version of the Situational Test of Emotional Understanding was used to measure SPT understanding and a newly developed scale to measure SPT importance. Responses from 135 English speaking participants aged between 18 and 32 were collected. A t-test showed that women scored higher than men in the understanding ability of SPT. Multiple hierarchical regression analysis revealed that the component of PM about self, together with the PM about thoughts and behaviours, could only predict the understanding dimension of SPT, while the component of PM about others could predict the importance dimension of SPT as well as the construct as a whole. Future research could focus on how these two constructs are associated among mental health professionals.

Keywords: Psychological Mindedness; Social Perspective Taking; Theory of mind; Mental Health Profession.

Resumen: La literatura previa sugiere que la Conciencia Psicológica (CP) y la Toma de Perspectiva Social (TPS) contribuyen a un mejor desempeño en profesionales de la salud mental. El objetivo del presente estudio consistió en examinar la asociación entre la CP y la TPS. Para ello, se creó un cuestionario online compuesto por el Balanced Index of Psychological Mindesness (BIPM), dos versiones adaptadas para medir la dimensión de CP (CP sobre otros y CP sobre pensamientos y comportamientos), una versión reducida del Situational Test of Emotional Understanding (SPT understanding) y una escala ad hoc para medir el componente de importancia (SPT importance). Se recogieron respuestas de 135 participantes angloparlantes con edades entre 18 y 32 años. Un t-test demostró que las mujeres puntuaron más alto en la habilidad de entendimiento de SPT. Los análisis de regresión jerárquica múltiple revelaron que la dimensión de CP de los propios sentimientos, junto con la dimensión de CP sobre pensamientos y comportamientos, predecían la dimensión de entendimiento de SPT. Por otra parte, la CP sobre otros podía predecir la dimensión de importancia de SPT así como el constructo entero. Futuras investigaciones podrían estudiar las asociaciones entre estos dos constructos en profesionales de la salud mental.

Palabras clave: Conciencia Psicológica; Toma de Perspectiva Social; Teoría de la mente; Profesional de la Salud Mental.

Introduction

Psychological mindedness (PM) and social perspective taking (SPT) are two independent concepts with an overlapping theoretical background. The term PM refers to a psychological capacity, that presents itself as an internal characteristic, whereby an individual is able to reflect on the psychological states and processes, including thoughts, feelings and behaviours, which take place in other people as well as within oneself (Beitel et al., 2005; Takagishi, 2020). In addition, although the term PM does not suggest that the way individuals interpret their observations about other people's mental states are necessarily correct, it does suggest that individuals who possess this construct have a natural ability to make sense of their observations in psychological terms (Wolitzky & Reuben, 1974; Takagishi, 2020). The latter might involve picking up on psychological patterns as well as inferring thoughts and feelings to observed behaviour (Beitel et al., 2005; Takagishi, 2020).

SPT, as well as PM, includes the ability to reflect on others' thoughts, feelings and behaviours. However, individuals who possess this construct actively engage in this process and are expected to understand and therefore, make appropriate judgments of their observations regarding other people's psychological states (Gehlbach et al., 2012). Further, SPT implies that those who are high in this quality also regard it as important. Importance, in this context, refers to the extent to which individuals think it is important to engage with someone else's mental states (Gehlbach et al., 2015). Although previous research has conceptualised the latter ability under the term motivation, this paper will use the terms importance and motivation interchangeably (Gehlbach et al., 2012).

While no existing research has concerned itself with investigating the relationship between PM and SPT, there is sufficient literature on each concept to propose a hypothetical relationship. One line of support for this argument derives from the theoretical background which suggests that people who possess, or engage with, either of the constructs, are particularly suited for professions which include dealing with other's psychological states, such as mental health work (Daw & Joseph 2010; Harvey, 2013; Paolino, 1982; Stulmaker et al., 2015). As a result of this, clinical supervision has become increasingly focused on training practitioners to develop 'the ability to reflect on feelings' which is a crucial feature of PM as well as of SPT (Borders et al., 2014).

A second reason why this paper proposes a relationship between the two constructs: both PM and SPT rely heavily on a developed cognitive ability, namely theory of mind. The latter has been defined as an individual's ability to attribute mental states and mental processes to others (Paal & Bereczkei, 2007). Literature suggests that PM relies on this cognitive ability in order to reflect on other people's psychological states and make sense of unique patterns of behaviour, thoughts and feelings found in other people (Boylan, 2006). Similarly, the definition of theory of mind largely overlaps with that of social perspective taking, as the latter relies on the former to take someone else's standpoint and accurately understand what other people are experiencing (Kim et al., 2018; Tamnes et al., 2018).

One limitation that the PM construct presents in existing literature includes a lack of consensus regarding what the construct seeks to address (Hall, 1992; Pickersgill, 2020). The abstract nature of the concept has meant that it has often been interpreted in a rather simplistic manner and commonly used interchangeably with other concepts such as self-awareness, self-reflection and self-consciousness (McCallum & Pipper, 1996; Pathak & Joshi, 2017). These interpretations fail to encompass a crucial feature of the psychological construct: an individual's ability to become aware and reflect on the psychological processes which take place in other people. Also, these interpretations pay no attention to

the cognitive and behavioural aspects of the construct. As a result, existing scales such as the 'Balanced Index of Psychological Mindedness' scale only measure the part of the construct which is concerned with awareness of one's own psychological processes, and only addresses the feeling dimension of the construct (Nyklicek & Denollet, 2009). Thus, no attention is paid to an individual's ability to become aware of the psychological processes in other people, nor does it address the cognitive and behavioural aspect of the PM construct.

Turning the focus on to how the construct of social perspective taking has been dealt with in previous research, it is worth noting that the most widely used scale to measure SPT is the 'Faux Pas' test (Stone et al., 1998). This consists of 20 items which describe social situations in short vignettes. Participants are then asked to report whether they believe the character behaved in a socially inappropriate manner. While this test has been shown to appropriately predict individuals' ability to engage in other people's mental states, it does not assess how important they think the perspective taking is in each context (Stone et al., 1998). The same problem exists with the Situational Test of Emotional Understanding (Ferguson & Austin, 2011). This test includes 42 multiple choice questions which describe a scenario and ask the participant to select a specific emotion which corresponds with the protagonist's feelings, but it does not address the importance component of the construct (Ferguson & Austin, 2011; Mayer et al., 2008; da Motta et al., 2020). Therefore, although previous research has successfully accounted for the understanding component of SPT, there is a lack of construct validity in existing as no attention is paid to the importance aspect of the construct (Kim et al., 2018; Maner & Gailliot, 2007; Trötschel et al., 2011).

A review of the factors that can influence PM and SPT suggest that there are gender differences among these two constructs. (Hoffman, 1997; Van der Graaff et al., 2014). Shill and Lumley (2002) found that females were significantly more psychologically minded than males. The study showed that females were more reflective about the meanings and motivations of both their own and other people's behaviour. Females also assigned more importance to discussing their own problems with others than males did. In addition, Vellante et al. (2013) found that females had a more developed theory of mind than males, which in turn enhanced their ability to empathise and engage in social perspective taking.

The aim of this paper is to find out whether being psychologically minded can predict individual's ability to engage in social perspective taking. To achieve this, the present study will attempt to overcome the limitations found in the scales used to measure these two constructs. To do so, when measuring PM, the study will include a measure of PM about one's own feelings which will be referred to as PM about self; a measure of PM about other people's feelings which will be referred to as PM about others; and a measure of PM which will address the cognitive and behavioural aspects of the construct in oneself and others, and which will be referred to as PM about thoughts and behaviours. For SPT the study will measure social perspective taking understanding and social perspective taking importance independently, and it will compute a score for the construct as a whole.

To have a better understanding of the factors that can influence PM and SPT, this paper will aim at finding out whether there are significant gender differences in participants' scores on PM and SPT. Lastly, to examine the relationship between PM and SPT the paper will aim at finding out whether PM can predict the understanding component of social perspective taking; whether PM can predict the importance component of social perspective taking and; whether PM can predict social perspective taking when treated as a whole construct.

Based on the research presented earlier on, the first hypothesis expects that women will score higher than men in all components of each construct; the second hypothesis holds that individual's performance on PM will be able to predict their scores on the SPT understating task with the PM about others

component accounting for significantly more variance in SPT understanding than the other PM components (that is, PM about self and PM about thoughts and behaviours); the third hypothesis holds that individual's performance on PM will be able to predict their scores on the SPT importance task with the PM about others component accounting for significantly more variance in SPT importance than the other PM components; and the fourth hypothesis holds that individual's performance on PM will be able to predict their scores on the overall SPT task with the PM about others component accounting for significantly more variance in the overall SPT score than the other PM components.

Method

Sample

The study was carried out in England and consisted of a sample of 153 English speaking participants. Because some of the situation's participants were asked to reflect on during the SPT tasks involved work scenarios, the researcher excluded 18 participants who had no prior work experience from the analysis. This was done to reduce the effects of confounding variables.

This left the study with 135 participants aged between 18 and 32, with a mean age of 24.53 (3.53). The sample consisted of 97 females and 38 males. Due to the inclusion criteria all participants had prior work experience, and 53.7% were currently engaged in higher education studies in any given area.

Instruments

The instrument used was an online questionnaire that consisted of 4 sections, as described below.

Section 1. Psychological mindedness

The construct of PM was measured using three scales. All scales consisted of 5-point Likert scales whereby participants had to record their level of agreement from 1 (strongly disagree) to 5 (strongly agree) for the items presented.

Scale 1. The first scale of the questionnaire was concerned with measuring PM about the self, and it evaluated the feeling dimension of the construct. For the purpose of this study it was named PM about self, and it consisted of the 14 items from the Balanced Index of Psychological Mindedness. Examples of the items found in this scale included 'I am often not aware of my feelings' and 'my negative feelings can teach me a lot about myself' (see Appendix 1). The scale had already been validated by its developers using a general adult population, which included a subpopulation of young people who were fluent English speakers and lived in the Netherlands. In their analysis, the scale showed to have good levels of factorial validity and reliability, convergent validity and discriminant validity (Nyklicek & Denollet, 2009). The scale has also demonstrated to be valid and reliable using an Italian sample of adults over the age of 18 (Girromini et al, 2017).

Scale 2. The second scale of the questionnaire assessed PM about others' feelings, and it was named PM about others. It also evaluated the feeling dimension of the construct. The scale was based on items from the Balanced Index of Psychological Mindedness, adapted to the evaluation of others' feelings. The scale was composed of 14 items such as 'other people's feelings show what they need' and 'I struggle to make sense of other people's feelings' (see Appendix 1). As described above, the original scale already showed to have good psychometric properties. To ensure that validity properties were conserved in the adapted 'to others' version of the scale, the authors only changed the wording which made reference to the person or people whose reflections were about. For example, 'I don't know what's going on inside me'

was changed for 'I don't know what is going on inside other people', and 'My feelings show me what I need' was changed for 'Other people's feelings show what they need' (see Appendix 1).

Scale 3. The third scale of the questionnaire evaluated the cognitive and behavioural aspects of PM in oneself and others. The scale was named PM about thoughts and behaviours. It was developed by adapting the items of the Balanced Index of Psychological Mindedness to the evaluation of selves' and others' cognitions and behaviours. It consisted of 12 items such as 'it's important for me to be able to understand how my thoughts arise' and 'I often think about why people behave in the way they do' (see Appendix 1). As described above, the original scale already showed to have good psychometric properties. To ensure that these properties were kept the changes on the scale focused on changing the adapting part of the items 'to others', as described in the previous scale, and on changing the focus from the feeling dimension into the cognitive and behavioural dimension of the construct. For example, 'I am often not aware of my feelings' was changed to 'I'm usually aware of my thoughts'. Although the wording of the scale changed more in this adapted version than in the previous one, the researchers made sure that key words such as interest, understand, important and aware, were at the core of the items. This scale showed a high level of internal consistency (Cronbach's alpha = .75) during the pilot study.

Section 2. Social Perspective Taking Understanding

The second section of the questionnaire was concerned with measuring the understanding ability aspect of social perspective taking (SPT understanding) and it comprised of one scale, namely scale 4.

Scale 4. The fourth subscale of the questionnaire consisted of a selection of 12 items from the Situational Test of Emotional Understanding, which consists of 42 items (Ferguson et al., 2011). The selection of the items was done so that it included most of the psychological states addressed in the original test, but with a reduced number of items. In line with the original test, the selection was made so that the items included a variety of positive and negative psychological states, as well as a variety of abstract, personal and work situations. Each item consisted of a description of a scenario in which a protagonist was facing a particular situation, and the respondent had to choose a psychological state that would match the psychological state of the protagonist. The choice of the respondent was to be taken from a list of five possible options, where only one of the options was correct. An example of the items presented was: 'Xavier completes a difficult task on time and under budget' where the possible choices were: surprise, pride, relief, hope, happy (see Appendix 1). Previous research has shown that this scale has good criterion and construct validity, using a sample consisting of English-speaking undergraduate and postgraduate students and the general public in the UK (Ferguson & Austin, 2010).

Section 3. Social Perspective Taking Importance

The third section of the questionnaire was concerned with measuring the importance aspect of SPT (SPT importance) and consisted of 1 scale, namely scale 5.

Scale 5. The fifth scale of the questionnaire included a 7 item 7-point Likert scale developed by the researcher. The scale asked participants to report how important it would be for them to engage in social perspective taking in a variety of scenarios; for example: 'You find out that a good friend of yours has broken up with his/her partner after a three-year relationship. You really want to know why they broke up. When you approach your friend, he/she tells you that he/she doesn't want to talk about the issue' followed by 'How important would it be for you to respect this decision?' (see Appendix 1). This scale was evaluated during the pilot study, where feedback was collected from participants on the wording of the items. All items contributed to variability in the scores and the scale was positively correlated with the SPT understanding scale, showing that it was measuring the same construct, which is SPT overall.

In addition, a variable was computed which comprised participants' overall SPT score. This was done by adding the mean score of the SPT understanding subscale and the mean score of the SPT importance subscale.

Section 4. Demographic data

Lastly, the fourth section was designed to collect demographic information. Participants were asked to report their gender, age, whether they were students and whether they had any experience of paid work (see Appendix 1).

Procedure

The study received approval from the Oxford Brookes Psychology Research Ethics Committee. Participants were recruited through social networks and snowball sampling. They were invited to take part in the study which consisted of completing an anonymous online questionnaire via Qualtrics. Before having access to the questionnaire, participants were presented with a form which explained the purpose of the study, as well as participants rights regarding consent, withdrawal and confidentiality. Participants had to tick a box to confirm that they had understood the information presented and they wanted to participate in the study (see Appendix 1).

Data analysis

All statistical analysis was done using SPSS. The scales were piloted prior to the main data collection. The procedure adopted for the pilot study was the same as for the main study, but consisting of a sample of 20 participants. PM scales were tested during the pilot study to check that internal consistency was accurate. The scales used to measure SPT were not expected to have high levels of internal consistency, as these scales measured how participants engaged with a range of emotions in a variety of contexts.

Once all the data had been collected, the researcher carried out a reliability analysis to test the internal consistency of each PM subscale. The measure of PM about self provided a satisfactory alpha value (Cronbach's Alpha = .723). For PM about others, the alpha value (Cronbach's Alpha = .673) led the researcher to delete item 3 in order to obtain an acceptable alpha value (Cronbach's Alpha = .708). The PM about thoughts and behaviours items obtained a satisfactory alpha value (Cronbach's Alpha = .757) but item 4 was dropped to increase the scale's internal reliability, resulting with a Cronbach's Alpha of .816.

Although no internal consistency was not expected for scales 4 and 5, the researcher used descriptive statistics to get an insight into how participants approached the two latter scales. Based on the percentages of appropriate responses provided for the SPT understanding scale, the researcher deleted items 8, 11 and 12 as less than one third of the participants made an appropriate judgment on these items and incorrect choices were widely distributed. This left the SPT understanding scale with 9 items. The results from the descriptive statistics suggested that no amends were required for the SPT importance scale.

To test the first hypothesis and find out whether there were any gender differences in individuals' ability to engage in PM and SPT, the data was analysed using an individuals' sample t-test (see Table 4). To test the second, third and fourth hypothesis, the data was analysed using multiple hierarchical regressions. For this purpose, a correlation matrix was carried out to see which pairs of PM and SPT variables were significantly correlated (see Table 5). Only the pairs of variables which were significantly correlated were added into the regression models.

To test the second hypothesis, and find out whether PM could predict SPT understanding, with the PM about others component being strongest predictor, the regression consisted of two steps. The first step included the PM about self and PM about thoughts and behaviours variables, and the second step included the PM about others variable (see Table 6).

To test the third hypothesis, and find out whether PM could predict SPT importance, with the PM about others component being the strongest predictor, a two-stage regression was carried out. The first stage included the PM about self and PM about thoughts and behaviours variables, and second stage included the PM about others variable (see Table 7).

Finally, to test the fourth hypothesis and find out whether PM could predict SPT overall with PM about others being the strongest predictor, a two-stage regression was carried out. The first stage included the PM about self and PM about thoughts and behaviours variables, and the second stage included the PM about others variable (see Table 8).

Results

Descriptive statistics

1.1 Psychological Mindedness

Table 1 shows the mean, standard deviations, maximum scores and minimum scores for the three PM measures. It shows that participants showed similar levels of PM across the three subscales.

Table 1

Means and standard deviation for PM

	<i>M</i> (SD)	Minimum score	Maximum score
PMS	3.77 (0.48)	2.21	4.79
PMO	3.68 (0.42)	2.69	2.00
PMTB	3.87 (0.52)	4.69	5.00

Note: PMS = PM about self; PMO = PM about others; PMTB = PM about thoughts and behaviours.

1.2 Social Perspective Taking -Understanding (SPT understanding)

Table 2 shows the scenarios presented to participants to assess their understanding ability of the social perspective taking construct. The second column presents the choice options participants were exposed to, with the appropriate response highlighted. The third column shows the percentages of participants who made the appropriate response. It shows that some scenarios were more difficult than others. Scenario 4 appeared to be the easiest (88.9% of participants answered correctly) and scenario 1 the most difficult (40% of participants answered correctly).

Table 2

SPT understanding scenarios, choice of answers and participant percentages of appropriate judgment

Scenarios Presented followed by the question; the X is most likely to feel?	Response choice (with appropriate response highlighted)	Percentage making appropriate judgment
A pleasant experience ceases and there is not much that can be done about it.	Ashamed, Distressed, Angry, Sad , Frustrated	40.0
Xavier completes a difficult task on time and under budget.	Surprise, Pride , Relief, Hope, Happy	53.3
An irritating neighbour of Eve's moves to another part of the country.	Regret, Hope, Relief , Sadness, Happy	74.1
The day Jill is going on a long planned outdoor picnic, the weather is really good.	Pride, Happy , Relief, Guilt, Hope	88.9
Eva's workmate organizes a goodbye party for Eva, who is going on a long holiday.	Surprise, Gratitude , Pride, Hope, Relief	76.6
Something unpleasant is happening. Neither the person involved, nor anyone else can make it stop.	Guilty, Distressed , Sad, Scared, Angry	45.2
If the current situation continues, Denise's employer will probably be able to move her job to a location much closer to her home, which Denise really wants.	Distressed, Happy, Surprised, Hope , Fear	61.5
Leya works as a trouble-shooter. She is presented with a standard-looking problem but cannot work out how to solve it.	Confused, Frustrated , Surprised, Relieved, Distressed	79.3
Charles is meeting a friend to see a movie. The friend is very late and they are not in time to make it to the movie.	Depressed, Frustrated, Angry , Contempt, Distressed	60.0

1.3. Social Perspective Taking -Importance

Table 3 shows a summary of the scenarios presented to participants to assess how important they regarded engaging with other's mental states, along with the mean (and standard deviation) for the social perspective taking importance task. The table shows that all participants thought it was important to accommodate the character's feelings, as shown by the lowest mean score (item 6) being 4.11 out of 7.

Table 3

SPT importance summary scenarios and mean (and standard deviation) scores reported by participants

Social Perspective Taking Importance Summary Scenario	M (SD)
A good friend breaks up with her partner after 3 years and tells you that they don't want to talk about the issue. How important would it be for you to respect this decision?	5.67 (1.22)
You've moved into a house with 4 other people and one of your housemates asks if you could wash up your dishes because they look messy and she/he really cannot cope with it. How important would it be for you to clean your dishes?	5.43 (1.35)
Due to government cuts 5 people, out of 20, will have to be fired and your best friend at work worries that their name will appear on that list. You accidentally spot the list of people and see that your friend's name is not on the list. How important would it be for you to tell you tell your friend that his/her name is not on the list?	5.07 (1.59)
Your tutor has sent you an assignment which you have easily completed. One of your classmates, however, is having real difficulties with it. Your classmate asks you for some help. How important would it be for you to help your classmate?	5.56 (1.01)
It is your friend's birthday soon and you have three presents in mind to choose for them. One of the presents is clearly the best one for your friend but it is a bit more expensive than the other two. How important would it be for you to get your friend the best present?	5.16 (1.39)
One of your housemates has accidentally broken one of your ceramic pots. The broken pot was of sentimental value to you and was a present from someone special. Your housemate apologizes several times and offers to buy you a new one. How important would it be for you to not tell your housemate why the pot really mattered to you?	4.11 (1.76)
You have been asked to complete a group coursework and you realize that one of your classmates in the group is feeling really shy. You know you can easily make people laugh by telling one or two jokes. How important would it be for you to make one or two jokes in the above situation?	5.24 (1.34)

2. Hypothesis 1: Gender differences in PM and SPT

An independent sample t-test was carried out to test for gender differences in PM scales and SPT tests. Q-Q graphs showed that the residuals were normally distributed. In a preliminary analysis a Levene's test was carried out to test for the assumption of homogeneity of variance. Results showed that this assumption had been met for all variables: PM about self ($p = .870$); PM about others ($p = .155$); PM

about thoughts and behaviours ($p = .995$); SPT understanding ($p = .681$); SPT importance ($p = .993$); SPT ($p = .929$).

Table 4 shows the gender differences in PM and social perspective taking. Gender differences were only significant in SPT understanding scores; $t(1, 133) = 2.18, p = .031, d = 0.68$, where more questions were answered correctly by women ($M = 0.59, SD = 0.15$) than by men ($M = 0.52, SD = 0.17$). The table shows that gender differences were not significant when SPT was treated as a single construct i.e. including the overall mean of SPT understanding and SPT importance scores.

Table 4

Gender differences in mean (and standard deviation) and level of significance.

	Male's $M(SD)$ score	Female's $M(SD)$ score	t	p	d
PMS	3.66 (0.51)	3.81 (0.47)	1.51	.133	0.14
PMO	3.60 (0.35)	3.71 (0.44)	1.42	.157	0.11
PMTB	3.84 (0.49)	3.89 (0.53)	0.52	.599	0.05
SPTU	0.52 (0.17)	0.59 (0.15)	2.18	.031*	0.68
SPTI	5.16 (0.62)	5.20 (0.67)	0.29	.772	0.03
SPT	4.15 (4,78)	4.23 (5,20)	0.79	.430	0.78

Note: PMS = PM about self; PMO = PM about others; PMTB = PM about thoughts and behaviours; SPTU = SPT understanding; SPTI= SPT importance; SPT= Social perspective taking overall.

3. Relationship between PM and SPT measures

A set one tail Pearson's correlation was calculated to see if the variables were related. Table 5 shows the correlation matrix for PM and SPT measures. It shows that the three PM variables (PM about self, PM about others and PM about thoughts and behaviours) were significantly and positively correlated. SPT understanding and SPT importance were positively correlated, although not to a significant degree. As it would be expected, SPT understanding and SPT importance were significantly and positively correlated to a high degree with the SPT construct when treated as a whole.

PM about self was positively correlated with all SPT variables (SPT understanding, SPT importance and SPT overall), although this correlation was only significant with SPT understanding and SPT overall. PM about others was positively and significantly correlated with all SPT variables, being this correlation stronger with SPT importance and SPT understanding. PM about thoughts and behaviours, was also positively correlated with all SPT variables, although this correlation was only significant for SPT importance and SPT. Finally, SPT, when treated as a whole construct, was significantly and positively correlated with all PM variables, with the correlation being stronger with PM about others than with PM about self and PM about thoughts and behaviours.

Table 5

Correlation matrix for PM and social perspective taking measures.

	PMO	PMTB	SPTU	SPTI	SPT
PMS	.504**	.607**	.235**	.123	.165*
PMO		.619**	.188*	.245**	.290**
PMTB			.119	.179*	.191*
SPTU				.135	.436**
SPTI					.950**

* $p < .05$, ** $p < .01$; *Note:* PMS = PM about self; PMO = PM about others; PMTB = PM about thoughts and behaviours; SPTU = SPT understanding; SPTI= SPT importance.

3.1 Hypothesis 2: The predictive capacity of PM on SPT understanding

A two-stage hierarchical regression was carried out to test the second hypothesis. Scatterplots showed that all variables met the assumption of linearity. The assumption of no multicollinearity was met as *VIF* scores were below 10 and tolerance scores above 0.2 (PM about self *VIF* = 1.59 $T = .628$; PM thoughts and behaviours *VIF* = 1.59 $T = .628$; PM about others *VIF* = 1.68, $T = .592$), showing that predictors were not highly correlated. The Durbin-Watson value (2.057) showed that the variables were sufficiently independent of each other. A plot of standardized residuals showed that the variation in the residuals was similar at each point of the model, meaning that the assumption of homoscedasticity had been met. Finally, a P-P plot showed that residuals were normally distributed.

The first stage of analysis aimed at testing whether PM about self and PM about thoughts and behaviours could significantly predict SPT understanding. The second stage of analysis was set to find out whether PM about others could predict SPT understanding above the PM about self and PM about thoughts and behaviours variables.

Table 6

Regression table for variables predicting social perspective taking understanding.

Analysis	Predictors	<i>B</i>	<i>Beta</i>	<i>R</i> ² change	<i>F</i>	<i>p</i>
Step 1	PMS	.832	.249	5.4	3.37	.030
	PMTB	-.087	-.028			.803
Step 2	PMO	.285	.074	0.3	0.40	.526

Note: PMS = PM about self; PMTB = PM about thoughts and behaviours; PMO = PM about others.

The hierarchial multiple regression showed that PM about self and PM about thoughts and behaviours accounted for 5.4% of variance in SPT understanding. This *R*² change appeared to be significant $F(2,118) = 3.37$, $p = .038$. Lastly, PM about others accounted for an additional 0.3% in variance in SPT understanding. This *R*² change appeared to be non-significant $F(1,117) = 0.40$, $p = .526$. Therefore, only

PM about self and PM about thoughts and behaviours appeared to be significant predictors of SPT understanding.

3.2 Hypothesis 3: The predictive capacity of PM on SPT importance

The third hypothesis was tested using a two-stage hierarchical regression. The data met the assumption of linearity as shown in scatterplots. The assumption of no multicollinearity was met, as *VIF* scores were below 10 and tolerance scores above 0.2 (PM about self *VIF* = 1.60, *T* = .624; PM about thoughts and behaviours *VIF* = 1.60, *T* = .624; PM about others *VIF* = 1.80, *T* = .554), showing that predictors were not highly correlated. The Durbin-Watson value (1.983) showed that the variables were sufficiently independent of each other. A plot of standardized residuals showed that the variation in the residuals was similar at each point of the model, meaning that the assumption of homoscedasticity had been met. Finally, a P-P plot showed that residuals were normally distributed.

The first stage of analysis was aimed at finding out whether PM about thoughts and behaviours could predict SPT importance. Lastly, the second stage of analysis was set to find out whether PM about others could predict SPT importance above and beyond the other PM about thoughts and behaviours.

Table 7

Regression table for variables predicting social perspective taking importance.

Analysis	Predictors	<i>B</i>	<i>Beta</i>	<i>R</i> ² change	<i>F</i>	<i>p</i>
Step 1	PMS	.121	.085	3.3	1.96	.462
	PMTB	.145	.030			.319
Step 2	PMO	.471	.300	5.0	6.22	.014

Note: PMS = PM about self; PMO = PM about others; PMTB = PM about thoughts and behaviours.

The hierarchical multiple regressions showed that PMS and PMG contributed to 3.3% of variance in SPTI.

The hierarchical multiple regression showed that PM about self and PM about thoughts and behaviours accounted for 3.3% of the variance in SPT importance. However, this *R*² change did not appear to be significant *F* (2,116) = 1.96, *p* = .145. Lastly, the second stage of analysis showed that adding PM about others to the model accounted for 5% of the variance. This *R*² change was significant *F* (1,115) = 6.22, *p* = .014. This showed that PM about others was able to predict SPT importance to a significant level.

3.3 Hypothesis 4: The predictive capacity of PM on SPT overall

The data met the assumption of linearity as shown in scatterplots. The assumption of no multicollinearity was met, as *VIF* scores were below 10 and tolerance scores above 0.2 (PM about self *VIF* = 1.602, *T* = .624; PM about thoughts and behaviours *VIF* = 1.602, *T* = .624; PM about others' *VIF* = 1.805, *T* = .554), showing that predictors were not highly correlated. The Durbin-Watson value (1.950) showed that the variables were sufficiently independent of each other. A plot of standardized residuals showed that the variation in the residuals was similar at each point of the model, meaning that the assumption of homoscedasticity had been met. Finally, a P-P plot showed that residuals were normally distributed.

The first stage of analysis looked at whether PM about self and PM about thoughts and behaviours could predict SPT when treated as a whole construct, and the second stage looked at whether PM about others could predict SPT as a whole above and beyond the other PM variables.

Table 8

Regression table for variables predicting social perspective taking overall (SPT).

Analysis	Predictors	<i>B</i>	<i>Beta</i>	<i>R</i> ² change	<i>F</i>	<i>p</i>
Step 1	PMS	1.36	.125	4.3	2.62	.278
	PMTB	1.02	.106			.357
Step 2	PMO	3.71	.307	5.2	6.64	.011

Note: PMS = PM about self; PMO = PM about others; PMTB = PM about thoughts and behaviours.

The hierarchical multiple regression showed that PM about self and PM about thoughts and behaviours did not contribute significantly to the regression model, $F(2,116) = 2.62$, $p = .077$ and accounted for a 4.3% of variation in SPT overall. The second stage of analysis revealed that PM about others accounted for a further 5.2% of variation in SPT overall. In addition, this variation was shown to be significant $F(1,115) = 6.64$, $p = .011$. These results confirmed that PM about others was able to predict SPT when treated as a single construct.

Discussion

For the first hypothesis, the data showed that there were no gender differences in any of the PM components. With regard to SPT, gender differences were only found for SPT understanding, but not for SPT importance nor for SPT when treated as a whole construct. For the second hypothesis, the regression model showed that although gender differences were found in the t-test, gender was not a significant predictor of SPT understanding. Only PM about self was a significant predictor of SPT understanding. For the third hypothesis, the regression model showed that PM about thoughts and behaviours was a significant predictor of PM importance. Further, it showed that PM about others could predict individual's level of SPT importance above and beyond the other PM variable. For the fourth hypothesis, the regression model showed that only PM about others could predict individuals' overall level of SPT.

The fact that gender did not account for significant differences in PM goes against Shill and Lumley's (2002) findings. They found that females were more psychologically minded than males. However, these differences could be the result of the different criteria used for obtaining the sample. Shill and Lumley used a larger sample, which included more male participants and which consisted of psychology students. In the present study, the sample was smaller and males represented less than one third of the sample. In addition, because a convenience sample was used, it is likely that males and females who decided to respond to the online questionnaire were more interested in these topics than those who decided not to respond. Thus, it is possible that the limitations of using a small convenience sample obtained through online questionnaires could have affected these results.

The data showed that there were gender differences in social perspective taking understanding, with women scoring higher than men. This goes in line with previous research showing that women tend to have a more developed theory of mind, which in turn enables them to make more appropriate judgments of the psychological processes which take place in other people (Adenzato et al., 2017; Vellante et al., 2013). One explanation which accounts for the fact that women tend to have a more developed theory of mind comes from evolutionary psychologists. The latter argue that humans' long period of caregiver dependency following birth has led females to develop an enhanced capacity to detect newborns

physiological and psychological states based on non-verbal facial expressions (Christov-Moorea et al., 2014; Matsunaga et al., 2018).

In the cognitive-developmental arena, this tendency of mothers to attribute psychological states to their infants based on non-verbal behaviour is known as mind-mindedness (Laranjo et al., 2008). Research has shown that the construct of mind-mindedness, which as well as the understanding ability of SPT, involves making inferences of other's psychological states, contributes towards the development of healthy mother-infant attachment relationships as well as towards the development of infants' healthy immune system (Meins et al., 2014). Thus, it would make sense to suggest that women's engagement with their infant's psychological states has enhanced their ability to infer psychological states in others. In addition, the latter may explain, in combination with general social expectations from western societies where women are expected to be empathic and care for others, why more women than men pursue careers in mental health professions which involve dealing with other's mental states (Harton & Lyons, 2003; Ruiz-Junco, 2017; Xheneti et al., 2019).

At this point, it is worth noting that while previous research on the constructs of social perspective taking understanding and mind-mindedness has focused on the ability to make inferences of other's psychological states based on facial expressions (eg: Reading the Mind in the Eyes test, Cohen et al., 2001) and to a more limited extent on the role of vocal cues (eg: Reading the Mind in the Voice test, Rutherford et al., 2002) this study goes a step forward: it shows that knowledge about other people's mental states can be obtained from situational information alone, without the need to evaluate facial expressions or vocal cues.

The data for the first hypothesis also showed that there were no gender differences in participant's scores for SPT importance and SPT when treated as a whole construct. This goes against the literature presented in the introduction, where it was stated women have a more developed theory of mind, which in turn enhances their capacity to engage on social perspective taking (Vellante et al., 2013). These results also go against Chopik et al. (2016) cross-cultural study, which showed that women scored higher in perspective taking than males across 63 countries. It is possible that the limitations brought about by using a small convenience sample consisting mainly of female participants could have affected the results of this study. In addition, this study used a newly developed scale to measure SPT importance. Although the scale's adequacy was validated during the pilot study, the latter only included a small sample of twenty participants. Therefore, further research should aim at obtaining a sample where male participants are more represented and conduct further validation on the SPT importance scale using a larger sample.

The findings for the second hypothesis partially supported previous findings. In line with the expectations, the data from the regression showed that individuals who had the tendency to reflect on their own feelings, and establish relationships between them in psychological terms (PM about self), were better able to understand other people's experiences (SPT understanding). This was expected because these two abilities have been linked by an enhanced performance in the mental health profession (Paolino, 1982). However, the findings also revealed that reflecting about others' feelings, and establishing relationships between them in psychological terms (PM about others) could not predict individuals' ability to understand other peoples' experiences (SPT understanding) above the predictive capacity of PM about self. This result was unexpected given that PM about others was thought to be strongly linked to SPT understanding as they both share a developed theory of mind (Ferguson & Austin, 2010).

One explanation for this unexpected result includes the methodology used to evaluate PM. This study adopted a self-report methodology, which consisted of obtaining results from likert scales that measured individuals' levels of agreement on a number of fixed sentences. Previous research which has combined

similar self-report methodology with free speech analysis found that the latter was able to better capture the implicit understanding involved in PM, which is not always reflected on self-reported measures (Hartley et al., 2016). Therefore, future research on PM about other people would benefit from including a mix-methods approach, where qualitative data from speech analysis can be used to complement quantitative information from scales.

For the third and fourth hypotheses, the results from the first stage of analysis showed that PM about self and PM about thoughts and behaviours were not able to predict SPT importance nor SPT when treated as a whole construct. Although these results were unexpected, the results from the second stage of analysis revealed that PM about other people was able to explain variations on the importance aspect of SPT as well as in SPT when treated as a whole construct. This means that people who reflect on others' feelings are more likely to consider important the process of engaging with others' psychological states, and are more likely to do so. The fact that PM about other was able to predict SPT when treated as a whole construct, also suggests that people who reflect on other people's feelings are, to some extent, more likely to understand how other's feel.

The latter findings go in line with the literature stated in the introduction regarding the link between these two constructs in terms of sharing an enhanced ability to perform the mental health profession and of relying on a developed theory of mind (Boylan, 2006; Daw & Joseph 2010; Harvey, 2014; Kim et al., 2018; Paolino, 1982; Stulmaker et al., 2015; Tamnes et al., 2018;). Further literature which supports this argument comes from Hartley et al. (2016) who found that PM, including PM about other people, and the ability to understand what others are experiencing, was a powerful predictor of case formulation skills in clinical professionals who work with people experiencing psychosis.

The fact that individuals who reflect on other people's feelings are more likely to engage in SPT has implications for the mental health sector. As mentioned in the introduction, previous research shows that clinical supervision has focused on training new professionals to develop the ability to reflect on feelings (Borders et al., 2014). However, this training has tended to focus on reflecting on feelings and experiences about the self. An illustration of this can be found in Jayatilleke and Mackie's (2013) study, which examined the role of reflection in continuous professional development for health professions, including mental health professions. Jayatilleke's and Mackie's findings showed that the ability to reflect was consistently taught and practised with reference to one's own experiences, thoughts, feelings and behaviours.

One way in which the ability to reflect is currently taught to mental health professionals is through mindfulness programs. Mindfulness, as well as reflection, is concerned with gaining awareness of one's own experiences, including feelings, thoughts, behaviour and bodily sensations, with the intention of gaining a new understanding and appreciation of such experiences. These practices have demonstrated to contribute to mental health professionals' well-being as well as to the development of strong therapeutic alliance and positive therapy outcomes (Jayatilleke et al., 2013; Rudaz et al., 2017).

The findings from this study suggest that further improvement in the training of mental health professionals might be gained from incorporating 'reflection about others' feelings' into training programs. One way of implementing this element of PM into training programs could be through group sessions, where trainees take turns to share personal experiences and ask their peers to reflect on the type and intensity of the feelings which were experienced by the speaker. Although to confirm this suggestion the present study should be replicated using a sample of mental health trainees, the results obtained from a sample of young adults suggest that the ability to reflect on what other people feel is likely to enhance the tendency

to engage in SPT, that is, to develop the ability and motivation to accurately engage with others' psychological states.

The benefits of incorporating 'the reflection about others' feelings' into mental health training programs might be especially relevant for clinical psychologists who work with people that experience complex disorders such as psychosis, where the patient's subjective reality, and therefore psychological experiences, tend to differ greatly from the one of the therapists. Similarly, it could be relevant for working with people who experience post-traumatic stress disorder, as research has shown that people who experience this disorder tend to feel estranged from the world and have significant difficulties developing close relations and intimate bonds. In these cases, it can be expected that if a therapist has the ability and motivation to engage with others' psychological states, this would help to break through the barrier of working with patients who have different subjective realities or who have difficulties building close relationships (de Masi, 2017; Knaevelsrud & Maercker, 2007).

On a reflective note, this study has contributed to existing literature in numerous ways. It is worth highlighting that the study has aimed at addressing the whole construct of PM as well as of SPT, by combining the use of existing scales with adapted and newly developed ones to cover areas of the constructs which had previously been unattended, such as the 'reflection about others' feelings' and the 'reflection about one selves' and others' thoughts and behaviours aspects of PM and the 'importance' aspect of SPT.

The limitations found on the way the constructs were approached are also worth highlighting. As it has been mentioned throughout the discussion, the study used a convenience sample where males were underrepresented. Also, the participants were recruited by asking them to complete online questionnaires through a snowball sampling method. It is possible that the way of recruiting participants could have affected the results, as it could have led the study to obtain data from people who have a natural interest in these abilities, and are therefore not representative of the overall young population. A replication of this study which aims at learning about gender differences in these two constructs should aim at obtaining a more representative sample where males and females are equally represented, and whose interest represents those of the wider young population.

Reflecting on the instruments used, it must be noted that evaluating the construct of PM solely through self-reported scales has brought about important limitations, possibly failing to capture important elements of the PM construct, such as parts of the PM about others variable. As mentioned earlier, adopting a mix methods approach could be a way of moving past this limitation in future research concerned with evaluating PM. In addition, the scale used to measure PM about thoughts and behaviours should be further validated using a larger sample than the one used during the pilot study for this investigation.

In regard to SPT, the current study used two separate and individual scales in order to measure the two aspects of this construct. This is a significant limitation as it means that participants were assessed on each dimension of the construct through different scenarios, requiring the participants to reflect on different emotions and relate in different ways to the story. For example, in the scale concerned with SPT understanding, participants were presented with fictional characters (e.g. Jill, Sadie, Xavier, etc) in most scenarios, whereas the scale concerning SPT importance included items which asked participants to relate to someone they know (a good friend, your house mate, one of your classmates, your best friend etc) (Ferguson et al., 2011).

This limitation might also explain why the elements of PM which were related to SPT understanding differed from those related to SPT importance. Research has shown that factors such as closeness of relationship might influence the extent to which participants regard others' psychological states as important (Manner and Gailliot, 2006). Thus, future research would provide a more accurate picture of SPT if it presented individuals with scenarios measuring their level of understanding, and then ask them how important they think it is to engage with the characters' psychological states in the same situation.

Conclusions

All in all, the aim of this study was to investigate whether the construct of psychological mindedness can predict the extent to which individuals engage in social perspective taking. Previous literature suggests that both constructs are involved in facilitating positive therapeutic outcomes when found in mental health workers. In addition, they have both been linked by a developed theory of mind. In an attempt to examine whether being psychologically minded could predict individual's tendency to engage in social perspective taking, the study provided an outline of the main features which make up each construct and ensured that all relevant aspects of the constructs under question were incorporated into the instruments used to collect data. Examining for the effect of gender, it was found that women were better able to understand other people's mental states than men. These differences go in line with literature from evolutionary as well as cognitive-developmental psychology, which attribute a more developed theory of mind to women as a result of their caregiving role towards newborns. The relationship between PM and SPT showed that PM about self and PM about thoughts and behaviours could only predict the understanding component of SPT, while PM about other people's feelings could account for variations in individuals' understanding of others' psychological states as well as in the tendency to regard them as important altogether (SPT overall). The practical implications of these findings suggest that it might be beneficial to include 'reflection about others' feelings' in mental health training programs, as the results point that reflecting about others' experiences leads to better understand and consider others' experiences as important. To further examine this suggestion, future research might want to examine how these constructs are related in people who train and work in the mental health sector. Lastly, to overcome the limitations of this study, it is recommended that future studies use include speech analysis in the measures of PM, as well as the use of scales. To measure SPT, it is recommended that future research uses the same scenarios to measure the understanding and importance components of SPT.

Conflicts of Interest: The authors declare no conflict of interest.

Ethical Approval: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved by the Ethics Committee of Oxford Brookes University (protocol code 1415/131).

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

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Appendix 1: Questionnaire

Psychological Mindedness and Social Perspective Taking in Young People
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Psychological Mindedness and Social Perspective Taking in Young People

You have been invited to take part in an undergraduate research study. Before you agree to participate, it is important that you read the following information carefully and understand the purpose of the study.

What is the purpose of the study?

The purpose of the study is to find out how psychological mindedness (the extent to which we think about other people's thoughts, intentions and feelings) and responses to potentially difficult everyday social situations are related. Most research into psychological mindedness has been focused on professionals and people working in the caring professions and linked to their career choices. This study aims to find out more about the general population. The study consists of an anonymous online questionnaire and should take no more than 20 minutes complete.

Why have I been invited to participate?

You have been invited to take part in this study because you are aged between 18 and 32.

Do I have to take part?

No. It is your choice whether or not to participate in this study. If you agree to take part you will have the right to withdraw at any point up to the time that you submit your answers to the online questionnaire and can do this by closing the browser.

What will happen to me if I take part?

If you agree to take part, you will be asked to fill in a questionnaire. consisting of three sections. One section will involve a series of statements asking how much you think about your experience and other people's experience. The second asks you to choose the emotion appropriate to a set of events/situations and the third asks you to imagine yourself in a situation and then decide how important it would be to act in a specified way. The questionnaire will take around 20 minutes to complete.

What are the possible disadvantages and benefits of taking part?

The only cost to you of taking part is your time. The main benefit is to the researcher for her undergraduate dissertation project but you may find the questionnaire interesting.

Will what I say in this study be kept confidential?

All information obtained for the purpose of this study is anonymous at all stages of the investigation – you are not asked to identify yourself in any way. No IP addresses will be stored by the questionnaire software to further protect your anonymity.

What should I do if I want to take part?

If you want to take part in the study, read through the bottom of the page and then click on 'NEXT'.

What will happen to the results of the research study?

The results obtained for this study will be kept securely and used for a psychology undergraduate dissertation project. If a publication is proposed the data will be transferred to the supervisor and kept for up to 10 years in accordance with Oxford Brookes University policy on data storage.

Who is organising and funding the research?

This study is being conducted by a student as part of an undergraduate course at Oxford Brookes University in the Department of Psychology, Social Work and Public Health.

Who has reviewed the study?

This study has been approved by the Psychology Research Ethics Committee at Oxford Brookes University. If you have any concerns about how the study has been conducted, you can contact the Department Research Ethics Officer, Morag MacLean on mmaclean@brookes.ac.uk.

Contact for Further Information

If you would like more information about the study you can contact Aloe del Campo Bartholomew on 13069875@brookes.ac.uk.

Thank you for taking the time to read this information sheet.

This section is about how you think about your own and other people's feelings. Please tick the box which best represents the extent to which you agree or disagree with each statement. There are no right or wrong answers; we are interested in what you think.

A) Balanced Index of Psychological Mindedness (BIPM).

- | | | | | | |
|--|---------------------|------------|------------------------|---------|------------------|
| 1. I am often not aware of my feelings | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 2. My attitude and feelings about things fascinate me | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 3. Most of the time, I experience little or no emotion | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 4. I guess I rarely listen to my feelings | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 5. My negative feelings can teach me a lot about myself | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 6. I don't know what's going on inside me | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 7. In the end you're better off if you take your negative feelings seriously | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 8. My feelings show me what I need | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 9. I am out of touch with my innermost feelings | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 10. I never think about what made me act in a certain way | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 11. I am better off when being in touch with my feelings | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 12. I can't make sense out of my feelings | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 13. I love exploring my "inner" self | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |
| 14. My deeper feeling is a good advisor | I strongly disagree | I disagree | Nor agree nor disagree | I agree | I strongly agree |

B) Balanced Index of Psychological Mindedness (BIPM) adapted to others.

1. I am often not aware of what other people are feeling
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
2. I find the attitude and feelings other people have about things fascinating
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
3. I know some people tend to experience little or no emotion (item deleted after reliability analysis)
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
4. I don't pay much attention to other people's feelings
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
5. Being aware of other person's negative feelings can tell me a lot about that person
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
6. I don't know what is going on inside other people
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
7. In the end you are better off taking other people's negative feelings seriously
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
8. Other people's feelings show what they need
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
9. I am not in touch with other people's feelings
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
10. I never think about what makes a certain person act in a certain way
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
11. I am better off when I am in touch with another person's feelings
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
12. I struggle to make sense of other people's feelings
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
13. I am interested in exploring other people's inner self
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree
14. Other people's deeper feelings can be a good advisor
I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

C) Balanced Index of Psychological Mindedness (BIPM) adapted thoughts and behaviours of self and others.

1. I'm usually aware of my thoughts

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

2. I don't have any interest in analysing other people's behaviour

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

3. I find thinking about my thoughts interesting

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

4. My behaviour often puzzles me (item deleted after reliability analysis)

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

5. It's important for me to be able to understand how my thoughts arise

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

6. I usually understand the reasons behind other people's behaviour

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

7. I'm usually aware of what other people are thinking

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

8. I'm not really interested in analysing my behaviour

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

9. I have a definite need to understand how other people's minds work

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

10. It's important to me to evaluate the things I do

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

11. I find thinking about other people's thoughts interesting

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

12. I often think about why people behave in the way they do

I strongly disagree I disagree Nor agree nor disagree I agree I strongly agree

The following section has 12 questions. For each question you will be presented with a scenario. Please tick the box which you think best describes the way the character feels. There are no right or wrong answers.

D) Situational Test of Emotional Understanding (STEU) reduced version.

A pleasant experience ceases and there is not much that can be done about it. The person involved is most likely to feel ...

- Ashamed
- Distressed
- Angry
- Sad
- Frustrated

Xavier completes a difficult task on time and under budget. Xavier is most likely to feel...

- Surprise
- Pride
- Relief
- Hope
- Happy

An irritating neighbour of Eve's moves to another part of the country. Eve is most likely to feel...

- Regret
- Hope
- Relief
- Sadness
- Happy

The day Jill is going on a long-planned outdoor picnic, the weather is really good. Jill is most likely to feel ...

- Pride
- Happy
- Relief
- Guilt
- Hope

Eva's workmate organises a goodbye party for Eva, who is going on a long holiday. Eva is most likely to feel ...

- Surprise
- Gratitude
- Pride
- Hope
- Relief

Something unpleasant is happening. Neither the person involved, nor anyone else can make it stop. The person involved is most likely to feel ...

- Guilty
- Distressed
- Sad
- Scared

- Angry

If the current situation continues, Denise's employer will probably be able to move her job to a location much closer to her home, which Denise really wants. Denise is most likely to feel ...

- Distress
- Happy
- Surprise
- Hope
- Fear

Sadie finds out that a friend of hers has borrowed money from others to pay urgent bills, but has in fact used the money for less serious purposes. Sadie is most likely to feel ...

- Anger
- Excitement
- Contempt
- Shame
- Horror

Leya works as a trouble-shooter. She is presented with a standard-looking problem but cannot work out to solve it. Leya is most likely to feel ...

- Confused
- Frustrated
- Surprised
- Relieved
- Distressed

Charles is meeting a friend to see a movie. The friend is very late and they are not in time to make it to the movie. Charles is most likely to feel...

- Depressed
- Frustrated
- Angry
- Contempt
- Distressed

Rashid needs to meet a quota before his performance review. There is only a small change that he will be able to make so there isn't much he can do to improve the outcome. Rashid is most likely to feel ...

- Irritated
- Scared
- Distressed
- Sad
- Hopeful

Someone believes that another person harmed them on purpose. There is not a lot that can be done to make things better. The person involved is most likely to feel ...

- Dislike
- Rage
- Jealousy
- Surprise
- Anxiety

The following section has 7 questions. You will be presented with a scenario and then asked how important it would be for you to behave in a particular way. Please tick the box which best describes your response. There are no right or wrong answers; we want to know what you think about these situations.

D) Social Perspective Taking Importance Scale.

You find out that good friend of yours has broken up with her partner after a three year relationship. You really want to know why they broke up. When you approach your friend, he/she tells you that he/she doesn't want to talk about the issue. How important would it be for you to respect this decision?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important

You've moved into a house with 4 other people. After a couple of weeks you are asked by one of your housemates if you could wash up your dishes after eating because they look messy in the kitchen and she/he really cannot cope with. The rest of the housemates clean their own dishes and only one person has a problem with you not doing it. How important would it be for you to clean your dishes?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important

There has been an announcement at work that due to government cuts 5 people out of 20 will have to be fired in your department. Your best friend at work has a strong feeling that their name will appear on that list. At a meeting with your boss, you accidentally spot the list of people and see that your friend's name is not on the list. However, you are not meant to have seen the list and your boss said it would not be finalised for another week. How important would it be for you to tell your friend that his/her name is not on the list?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important

Your tutor has sent you an assignment which you have easily completed. One of your classmates, however, is having real difficulties with it. Your classmate tells you that they are very worried about failing this assignment and asks for some help. How important would it be for you to help your classmate?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important

It is your friend's birthday soon and you have three presents in mind to choose for them. One of the presents is clearly the best one for your friend and although you can afford it, it is a bit more expensive than the other two. How important would it be for you to get your friend the best present?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important

One of your housemates has accidentally broken one of your ceramic pots. This is the first time your housemate has broken anything of yours. Your housemate apologises several times and offers to buy you a new one. The broken pot was of sentimental value to you and was a present from someone special. How important would it be for you to not tell your housemate why the pot really mattered to you?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important

You have been asked to work with a small group of people in order to complete a task for your course. When you have your first meeting, you realize that the atmosphere is quiet and that one of your classmates is feeling really shy. You know you can easily make people laugh by telling one or two jokes. How important would it be for you to make one or two jokes in the above situation?

- Not at all Important
- Very Unimportant
- Somewhat Unimportant
- Neither Important nor Unimportant
- Somewhat Important
- Very Important
- Extremely Important