The factors involved in glossophobia in a non-clinical student population

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ABSTRACT

Glossophobia can be described as an individual's fear of public speaking, which can have a negative influence on their way of living. The aim of the present study was to assess the factors associated with glossophobia in a non-clinical student population. An opportunity sample recruited one hundred and twenty students (*N* = 120) to assess factors associated with glossophobia. The questionnaire survey incorporated vignettes to evaluate whether the gender of a hypothetical audience or the audience's level of interest would influence scores on the social phobia inventory (SPIN), self-esteem (SE) and public self-consciousness (PSC) scales. Pearson's r correlations, t-tests and ANOVAs were conducted. Findings established a significant relationship between scores reported on SPIN and PSC. T-tests revealed significantly higher mean scores for female participants on SPIN and PSC, but a non-significant difference between male and female participants on SE. Other findings revealed a non-significant interaction between the gender of an audience and the audience's level of interest on SPIN, SE and PSC scores. The present study extends research related to glossophobia, however future research should consider whether vignettes as a method should be used to assess factors associated with glossophobia.

KEY WORDS:	GLOSSOPHOBIA	SELF-ESTEEM	PUBLIC SELF-CONSCIOUSNESS	GENDER	INTEREST

Introduction

Over the past few decades, there has been a substantial rise in literature concerning the epidemiology and treatment of glossophobia. Glossophobia, a subtype of social anxiety, can be explained as an individual's fear of speaking in public (Hancock et al., 2010). Recently, the term glossophobia has gained recognition throughout literature. However, researchers still have a tendency to view this disorder as the performance anxiety subtype of social anxiety disorder (Blöte et al., 2009). Social anxiety disorder has been frequently revised in the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013), as researchers have claimed that the criteria and diagnosis is too narrow (Bögels et al., 2010). In response, the *Diagnostic and Statistical Manual of Mental Disorders, fifth edition* (APA, 2013) has expanded the criteria to incorporate adults and shifted the power of diagnosis from the client to the clinician.

Often referred to as the 'neglected disorder' (Wittchen and Fehm, 2003:4), this social fear is considered to be a common disorder that can be in conflict with some occupations, whereby prevalence rates fluctuate from 5-14% (Brunello et al., 2000). During public speaking situations, speakers expect signs of anxiety to be noticed by other individuals, such as trembling (Stravynski et al., 2004). However, the disorder has not been claimed to be a physical disability (Osorio et al., 2010), but society has started to recognise the restrictive elements that lead socially anxious individuals to avoid situations that require them to speak to other individuals (McCroskey, 1977). Moreover, McCroskey (1977) claimed that individuals who have not experienced glossophobia have a tendency to be in a pathological state, as the fear can become so apprehensive that it forms restrictions in social settings (McCroskey and Anderen, 1976), thus affecting their social performance (Furmark, 2002). However, there are no clear associations as to whether anxious individuals prefer to embrace or avoid speaking situations (Deiters et al., 2013).

Cho et al. (2004) claimed that there has been widespread controversy amongst researchers, as they are undecided as to which assessment method measures glossophobia accurately. Despite pre-existing instruments attempting to highlight feared speaking situations, it has been considered that self-report instruments are a popular method to assess glossophobia (Ezrati-Vinacour and Levin, 2004). However, the debate has continued due to the absence of empirical studies supporting the psychometric properties of pre-existing instruments (Cho et al., 2004). Furthermore, Hoffman and DiBartolo (2000) suggested that there is a deficiency in employing cognitive assessments when assessing glossophobia. Researchers (Cho et al., 2004; Hoffman and DiBartolo, 2000) have started to develop instruments that measure glossophobia more precisely, although the scales are subject to psychometric assessments. Instruments, such as the social phobia inventory (SPIN; Connor et al., 2000), have been considered as an alternative measure of glossophobia until pre-existing instruments have obtained sufficient empirical support (Osorio et al., 2010).

Influence of Gender on the Audience and Speaker

Many factors have been suggested to affect an individual's level of glossophobia, however literature has indicated that gender differences may have an influence on public speaking anxiety (Bortfeld et al., 2001). Reports have indicated that females report higher prevalence rates, whereas males tend to report the greater impairments (Vîslâ et al., 2013). However, McLean and Hope (2010) contradicted the notion of gender biases, which adds to the speculation as to whether gender differences are evident in glossophobia (Roberts et al., 2011). Limited research has been conducted on the gender of an audience. However, the concept of sex-role socialisation might assist in understanding this concept. The Western expectation of the male sex-role has conveyed an image of being self-confident (Bruch and Cheek, 1995). Males manifesting behaviors associated with the opposite gender are subject to negative evaluation from audiences (Turk and Heimberg, 1998), which can restrict their social development (Bacon and Ashmore, 1985). In contrast, Rapee and Spence (2004) claimed that the notion of behavioral inhibition can explain an individual's behavioral response to a new situation, which suggests that females might have a tendency to be shy and reticent during speaking situations (Belsky and Park, 2000; Bem, 1974). However, this might explain the reason as to why females might avoid the negative feedback that can be experienced with the male population (Turk and Heimberg, 1998).

Audience's Level of Interest

High importance has been placed on an audience's level of interest during speaking tasks (MacIntyre et al., 1997) suggesting that the properties of an audience may affect the individual's excessive fear (Harb et al., 2003). Whitehead (2001) introduced the concept of social mirroring, which can be described as an attempt to understand the self through the observation of other individuals. Hoffman and DiBartolo (2000) extended this concept with the suggestion that individuals only observe negative evaluation from other individuals. Cognitive models related to social phobia (Clark and Wells, 1995; Rapee and Heimberg, 1997) have asserted that individuals automatically increase attention to the self by evaluating their surroundings (MacIntyre et al., 1997), thus developing vaster social fears (Deiters et al., 2013), and creating anxiety-provoking situations (Bassett et al., 1973).

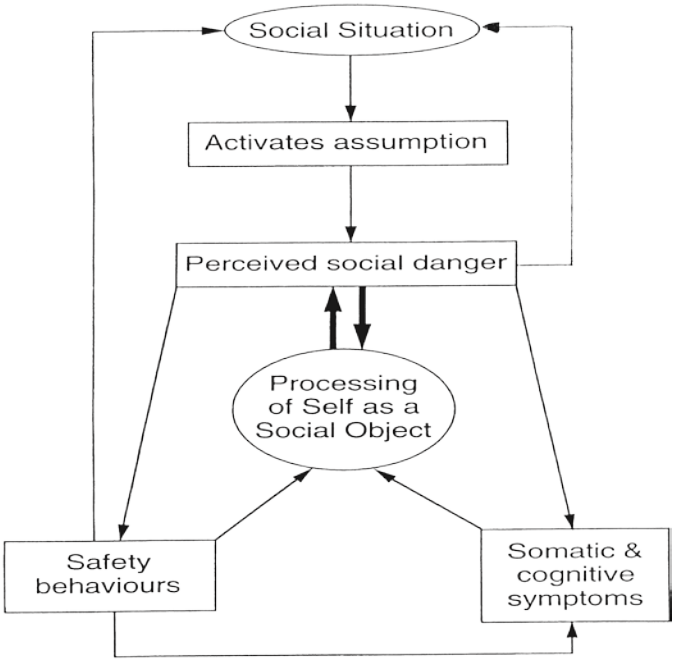

*Figure 1***.** Cognitive model (Clark and Wells, 1995).

Motley (1991) suggested that there are two types of public speakers: (i) audience-centered and (ii) performance-orientated. Performance-orientated speakers propose that speech success is dependent on their oratorical behavior, whereas an audience-centered speaker argues that the content of the speech determines success. The influence of internal thoughts and environmental cues has been explained through the use of the cognitive models (see figure 1 above). Clark and Wells (1995) claimed individuals focusing attention on the self could influence how they observe the environment (performance-orientated speaker). Mellings and Alden (2000) supported the claim that self-related aspects affect individuals during public speaking situations. In contrast, Rapee and Heimberg (1997) placed importance on both internal thoughts and environmental cues, as individuals notice negative behaviors in their environment and associate it with existing fears (Veljaca and Rapee, 1998).

Self-Esteem

Daly and Stafford (1984) claimed glossophobia could be associated with an individual's evaluation of the self, whereas Hoffman and DiBartolo (2000) claimed that only negative self-evaluation could affect individuals. In this context, self-esteem can be described as an individual's self-evaluation during public speaking tasks (Gorrese and Ruggieri, 2013). It has been suggested that there are subtypes of self-esteem: (i) implicit and (ii) explicit. Implicit self-esteem is regarded as an automatic evaluation of the self (Dijksterhuis, 2004), whereas explicit self-esteem is regarded as deliberate behavior manifested by an individual (Grumm et al., 2009). Dijksterhuis (2004) found that implicit self-esteem has a greater influence with the evaluation of a social situation, leading to conditional beliefs, which causes consistent negative situations (Glashouwer et al., 2013). However, De Jong (2002) claimed the sensitivity of self-esteem measures have caused limitations in establishing a relationship

between glossophobia and implicit self-esteem, thus indirect measures should be considered when measuring self-esteem (Dijksterhuis, 2004).

Public Self-Consciousness

Duval and Wicklunds (1973) suggested an individual is the subject of consciousness when their experience of public speaking is submerged with the external environment. Hope and Heimburg (1988) defined self-consciousness as a predisposition that focuses attention on the self, which can be divided into two subtypes: (i) private and (ii) public self-consciousness. George and Stopa (2008) defined private self-consciousness as an individual's ability to concentrate on their internal thoughts, whereas public self-consciousness is when individuals consider themselves as a social object (see figure 1). Public self-consciousness (PSC) has been reported to have a strong relationship with social anxiety (Darvill et al., 1992), and therefore researchers anticipate ratings to increase when exposed to speaking situations (Clark and Wells, 1995). Other studies have contradicted that a relationship between PSC and glossophobia exists (Saboonchi and Lundh, 1997). However, these findings have only been found within non-clinical samples (Saboonchi et al., 1999).

The present study aims to assess whether the above-mentioned factors are associated with glossophobia in a non-clinical student population. The study utilises vignettes and questionnaires to assess factors associated with glossophobia. The context of the vignette is based on two properties of a hypothetical audience: (i) the gender of the audience and (ii) the audience's level of interest. In addition, the participant's response will be measured on three scales: (i) SPIN, (ii) SE and (iii) PSC.

Research Questions

RQ1. To establish whether SPIN scores representing glossophobia relate to scores reported on the SE and PSC scale.

RQ2. To establish any relationships between SPIN, SE and PSC scores.

RQ3. To establish whether the gender of the participant, gender of a hypothetical audience or the audience's level of interest affect scores reported on the SPIN, SE and PSC scales.

Hypotheses

H1. There will be a positive relationship between SPIN and SE scores.

H2. There will be a positive relationship between SPIN and PSC scores.

H3. There will be a positive relationship between SE and PSC scores.

H4. The context of the vignettes will have a significant effect on SPIN scores.

H5. The context of the vignettes will have a significant effect on SE scores.

H6. The context of the vignettes will have a significant effect on PSC scores.

H7. Female participants will have higher SPIN scores than male participants.

H8. Female participants will have higher SE scores than male participants.

H9. Female participants will have higher PSC scores than male participants.

Methodology

The study aimed to evaluate factors associated with glossophobia through the administration of a 2 X 2 between-subjects design. In addition, the study utilised a quantitative method that incorporated questionnaires and vignettes. The independent between-subject variables were based on the type of audience presented in each vignette: (i) the gender of the audience (male or female) and (ii) the audience's level of interest (interested or not interested). The dependent variables (DVs) were scores reported on the self-reported questionnaires: (i) SPIN, (ii) SE and (iii) PSC. The assembled data was examined through statistical tests that included correlation analysis (H1, H2, H3), analysis of variance (ANOVA) (H4, H5, H6) and t-tests for independent samples (H7, H8, H9).

Extraneous situational variables (ESV's) might have influenced how participants responded to the practical aspects of the study, in relation to: (i) the time of the day and (ii) peer-pressure. The time of the day might have affected the participant's response to the questionnaire survey, due to the variation in mood levels during different times of the day. Thus to ensure the ESV's are consistent throughout the study, the researcher conducted the study during the morning period of the university timetable. Moreover, peer-pressure might have influenced the individual's response to the self-reported questionnaires, therefore participants were allowed to complete the questionnaire survey in their own time, without the influence of other individuals, thus reducing demand characteristics (Marshall, 2005).

Rationale

Literature related to glossophobia has found that researchers utilise self-report questionnaires to evaluate factors associated with glossophobia (Cho et al., 2004;

Hoffman and DiBartolo, 2000). The practicality of questionnaires is considered to be an effective method in collecting quantitative data, particularly when assessing factors associated with glossophobia (Cho et al., 2004). Marshall (2005) claimed that questionnaires have a tendency to be easily distributed and provide a concise representation of the target population, and therefore researchers should contact participants individually, rather than in collective groups, to gather higher response rates.

However, there has been a debate regarding the use of pre-existing instruments related to glossophobia (SAATQ; Cho, 2001; SSPS; Hoffman and DiBartolo, 2000), primarily due to the absence in empirical support for the psychometric properties (Osorio et al., 2000). The reoccurring weakness could be dependent on the lack of focus on cognitive aspects related to glossophobia (Cho et al., 2004). Therefore, the researcher administered SPIN to represent glossophobia, as there has been psychometric support for this instrument (see appendix G for reliability coefficients). Despite being classified as a broader instrument, SPIN maintains the ability to observe cognitive aspects related to glossophobia (Osorio et al., 2010). Research related to glossophobia (Yah Hau Tse, 2012; Macintyre et al., 1997) has implemented vignettes to acknowledge the factors that may have an influence on an individual's anxiety levels during speaking situations. Vignettes aim to assist the participants with the presentation of hypothetical audiences, in that the participants can respond to them as they would in a real life situation (Kim, 2012). It has been suggested that the extensive use of vignettes produces a minor social-evaluation threat (Dickerson and Kemeny, 2004), and therefore is an ethical way of measuring glossophobia, rather than inserting participants into an actual public speaking setting. However, it has been argued that vignettes might not provide a valid reflection of situations that would occur in real life (Spalding and Phillips, 2007).

Participants

The study recruited one hundred and twenty participants (*N* = 120) through the use of an opportunity sampling method. The researcher obtained an equal amount of participants from each gender: Males *(N=60)* and Females *(N=60)*. The participants attended Manchester Metropolitan University (MMU), as it has been considered that students are subject to social situations (Osorio et al., 2010), with prevalence rates fluctuating from 20-34% (Stein et al., 1994).

Materials

The consent form (appendix I) provided information to the participant regarding the aim of the study, what they were expected to do and to confirm their participation in the practical aspect of the study. After issuing the consent form, the participants were administered with one of the four changing vignettes (appendix H), which described the properties of the audience, in regards to their gender and their level of interest. The participants were asked to respond to the vignette as to whether the scenario would have an influence on them in a real life situation. Following the vignette, the

social phobia inventory (appendix C), self-esteem (appendix D) and public self-consciousness scale (appendix E) were administered as an entire questionnaire (appendix F). The SPIN instrument contained seventeen items measured on a five-point Likert-type scale (0-4), alternating from ‘not at all’ to ‘extremely’. In order to administer SPIN, the researcher made prior contact with Dr. Jonathan Davidson to obtain permission to use the inventory (see appendix B).

Literature (Vîslâ et al., 2013; MacIntyre et al., 1997) has indicated that the above-mentioned personality factors (SE and PSC) are associated with glossophobia, thus the additional sixteen items are constructs that were depicted from the International Personality Item Pool (IPIP). The IPIP scales were selected, as they are a shortened version of existing questionnaires, thus increasing reliability and validity when administered to participants (see appendix G for reliability coefficients). The self-esteem and public self-consciousness scales are measured on a five-point scale (1-5), alternating from ‘very inaccurate’ to ‘very accurate’. However, the self-esteem scale consists of five to ten statements, both positive and negative items, whereas, the public self-consciousness scale is comprised of six to twelve statements, both positive and negative items. To conclude, the debrief form (appendix J) was presented to the participant to provide details about follow up contact and developing a personal unique code for future reference.

Pilot Study

Before the data collection process, the researcher administered a pilot study to obtain formative feedback from the participants. Twenty participants *(N=20)* were obtained through the use of an opportunity sample. Participants were presented with a consent sheet (appendix I), vignette, questionnaire, and feedback sheet for the pilot study (appendix K). The feedback sheet enabled participants to indicate how they felt during the process whilst completing the questionnaire, and to suggest any recommendations on how the process could be improved for future participants. Any feedback would be taken into account and would assist in the revision of the practical aspects involved in the study, if needed.

Procedure

In regards to the main study, the contacted participants attended the Manchester Metropolitan University. The questionnaires were administered to students in a secure university setting, such as lecture theatres and libraries. This allowed participants to complete the questionnaire in their own environment, which aimed to ensure that no extraneous variables would influence their response. In addition, participants were informed that they would have to indicate their gender, as the data would be examined to assess if any gender differences were evident. After verifying consent, the participants were required to respond to one of the four self-established vignettes. Subsequently, participants were asked to respond to the questionnaire survey (SPIN, SE and PSC), by circling a response. To conclude, the participants

were asked to read the debrief form, and construct a personal identity number, before returning the completed questionnaire to the researcher.

Ethical Considerations

Before commencing with the study, considering the potential ethical issues was imperative to protect the participants from the practical procedures of the study. In order to prevent any psychological harm to the participant, an application for ethical approval (appendix A) was completed in accordance with the BPS Code of Ethics and the project supervisor (Dr David Holmes). The researcher informed the participants of the potential ethical issues that they should have been aware of, such as anonymity and their right to withdraw. King and Horrocks (2010) claimed that respect is a fundamental aspect of utilitarianism. Not only did this require the researcher to ensure that the participant's identity remained anonymous, but it also protected the participant through the use of process consent. To ensure anonymity, the participants were requested for their MMU identification number, as opposed, to their names. After completing the study, the participant developed a personal unique number to use as a reference, so that they could withdraw themselves or their data from the study, if need be.

Results

Preparation of the data

Before the appropriate statistical tests were conducted, the data had been scored and entered into SPSS (Version 19.0). During the scoring procedure, the relevant items had been reversed in accordance to the information provided with the IPIP scales (see appendix D and E). Each participant will have obtained an overall score for each of the continuous variables: (i) SPIN, (ii) SE, and (iii) PSC.

Descriptive statistics

In order to meet the criteria for parametric tests, the continuous variables were tested for skewness between male and female participants. In addition, the means, standard deviations, skewness and z-scores are presented for male and female participants for each continuous variable in the tables (below).

Table 1
The means, standard deviations, skewness (including standard error) and z-scores for the SPIN variable

SPIN variable	***N***	***M***	***SD***	**Skewness Statistic**	**Standard Error**	**z-score**
Male participants	60	21.07	10.52	.56	.31	1.81
Female participants	60	30.15	12.73	-.19	.31	0.61

Note: Figures have been rounded to two decimal places. In addition, z-scores were calculated by dividing the skewness statistic with the standard error (Langdridge, 2004).

Table 1 (above) shows that the data set obtained from male and female participants on the SPIN questionnaire were approximately distributed, in terms of skewness. It has been suggested that the skewness statistic must be less than double the value of the standard error to indicate that the data set is approximately distributed (Maimon and Rokach, 2005). In addition, the calculated z-scores should be between the value of -1.96 and +1.96 to suggest that they do not differ significantly from normality (Field, 2009). Despite the data set being slightly skewed for both male and female participants, it does not differ significantly from normality. Therefore, it is reasonable to assume that the population from which it is drawn is approximately distributed.

Table 2
The means, standard deviations, skewness (including standard error) and z-scores for the SE variable

SE variable	***N***	***M***	***SD***	**Skewness Statistic**	**Standard Error**	**z-score**
Male participants	60	29.28	5.18	-1.58	.31	5.10
Female participants	60	29.82	5.37	-.58	.31	-1.87

Note: Figures have been rounded to two decimal places. In addition, z-scores were calculated by dividing the skewness statistic with the standard error (Langdridge, 2004).

Table 2 (above) shows that the data set obtained from female participants on the SE questionnaire were approximately distributed, in terms of skewness. However, the skewness statistic for male participants (-1.58) is more than double the value of the standard error (.31), and therefore indicates that the male participants who scored on the SE questionnaire are not from a normally distributed sample (Tabachnick and

Fidell, 1996). However, it has been argued that parametric tests can still be used if one value does not meet the assumptions for parametric tests (Coolican, 1994).

Table 3
The means, standard deviations, skewness (including standard error) and z-scores for the PSC variable

PSC variable	*N*	*M*	*SD*	Skewness Statistic	Standard Error	z-score
Male participants	60	28.48	7.02	-.13	.31	-0.42
Female participants	60	32.83	8.27	-.33	.31	-1.06

Note: Figures have been rounded to two decimal places. In addition, z-scores were calculated by dividing the skewness statistic with the standard error (Langdridge, 2004).

Table 3 (above) shows that the data set obtained from male and female participants on the PSC scale were approximately distributed, in terms of skewness. Although the sample data is slightly skewed for male and female participants, the data set does not differ significantly from normality. Therefore, it is reasonable to assume that the population from which it is drawn is approximately distributed. In essence, the skewness values meet the requirement for parametric tests (Brace et al., 2012).

Inferential statistics

In order to meet another assumption for parametric tests, it has been suggested that the data set must be measured on scales (Brace et al., 2012). It is acknowledged that the continuous variables (SPIN, SE and PSC) are measured on scales, and therefore meets another criteria for parametric tests to be conducted.

Correlation tests. To test the degree of relationship between the continuous variables, correlation tests were conducted to test H1, H2 and H3. Prior to conducting the correlation tests, scatterplots were produced to examine the trends between the continuous variables. Since the data sets meet the criteria for parametric tests, Pearson's Product Moment Correlation Coefficient was administered to test the relationship between the continuous variables (Langdridge, 2004).

H1. There will be a positive relationship between SPIN and SE scores.

Descriptive Statistic

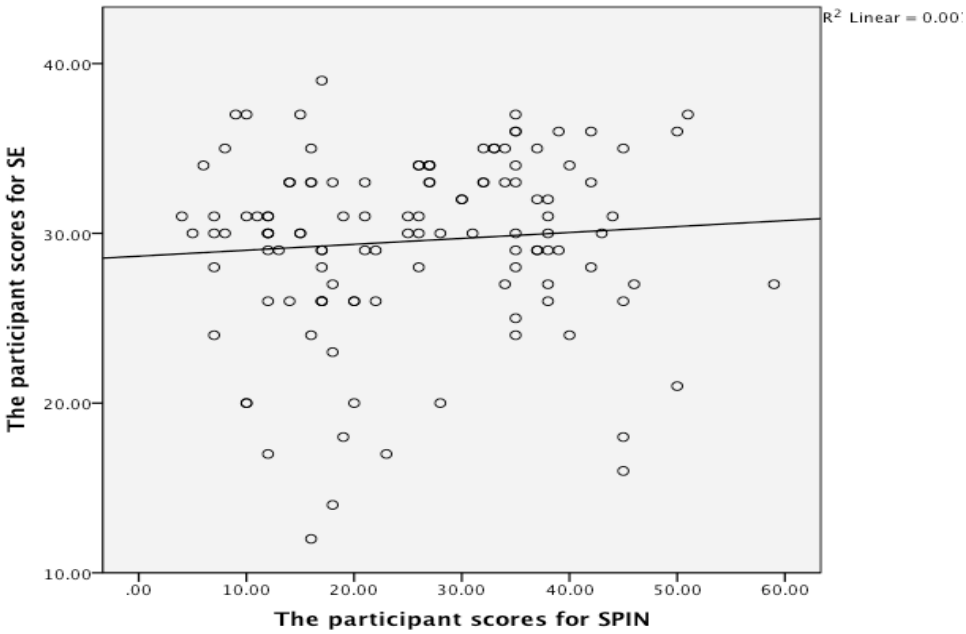

Figure 1: Scatterplot for SPIN and SE scores.

Figure 1 (above) demonstrates that the plots are scattered away from the regression line, and therefore suggests that the correlation would be close to zero. Overall, there was a non-significant relationship between SPIN and SE scores.

Inferential statistic

Table 4

Matrix of correlation coefficient for SPIN and SE

		SPIN	SE
SPIN	**Pearson correlation**	1	.083
	Sig. (1-tailed)		.184
	N	120	120
SE	**Pearson correlation**	.083	1
	Sig. (1-tailed)	.184	
	N	120	120

Note: Tested as one-tailed hypothesis.

120 MMU students produced scores on the SPIN questionnaire (*M*= 25.61*, SD*=12.49) and the SE questionnaire (*M*= 29.55, *SD*= 5.26). Pearson's correlation demonstrated that there was a weak positive correlation between the SPIN scores and SE scores (r = .08, p > .05, one-tailed). Evidence suggests that the hypothesis can be rejected, as the relationship between the continuous variables were non-significant.

H2. There will be a positive relationship between SPIN and PSC scores.
Descriptive statistics

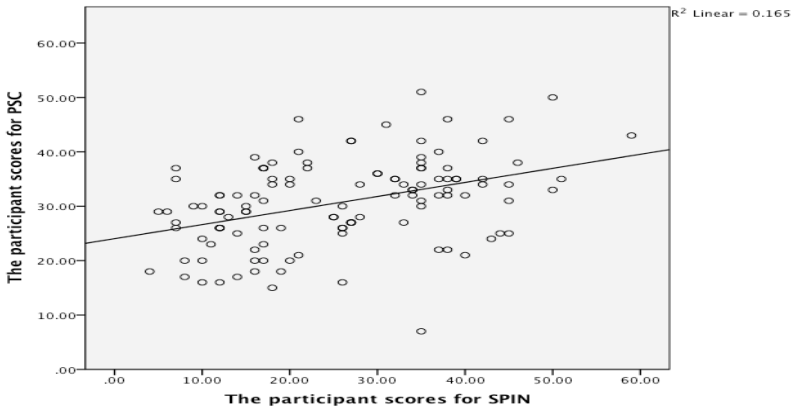

Figure 2: Scores for SPIN and PSC scores.

Figure 2 (above) demonstrates that there is a positive relationship between the SPIN scores and PSC scores. The plots are relatively close to the regression line, and therefore Pearson's correlation will be conducted to assess the significance of this relationship.

Inferential statistics

Table 5

Matrix of correlation coefficient for SPIN and PSC

		SPIN	**PSC**
SPIN	**Pearson correlation**	1	.407**
	Sig. (1-tailed)		.000
	N	120	120
PSC	**Pearson correlation**	.407**	1
	Sig. (1-tailed)	.000	
	N	120	120

Note: Correlation is significant at the 0.01 level (one-tailed).

120 MMU students produced scores on the SPIN questionnaire (*M*= 25.61, *SD*= 12.49) and PSC questionnaire (*M*= 30.66, *SD*= 7.94). Pearson's correlation demonstrated that there was a significant positive correlation between SPIN and PSC scores, (r = .41, p < .001, one-tailed). Evidence suggests that the hypothesis can be accepted, as there was a positive correlation between both variables, and enough evidence to suggest that the correlation is statistically significant.

H3. There will be a positive relationship between SE and PSC scores
Descriptive statistics

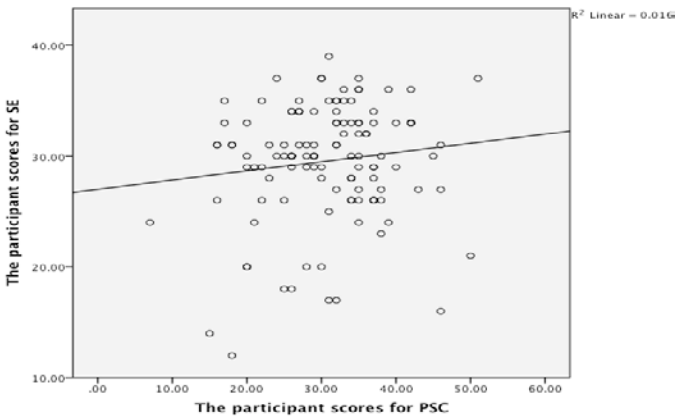

Figure 3: Scatterplot for SE and PSC scores.

Figure 3 (above) demonstrates that the plots are scattered away from the regression line, and therefore indicates that the correlation might be close to zero. The graph suggests that there is a non-significant relationship between SE and PSC scores.

Inferential statistics

Table 6

Matrix of correlation coefficient for SE and PSC

		SE	**PSC**
SE	**Pearson correlation**	1	.125
	Sig. (1-tailed)		.087
	N	120	120
PSC	**Pearson correlation**	.125	1
	Sig. (1-tailed)	.087	
	N	120	120

Note: Tested as one-tailed hypothesis.

120 MMU students produced scores on the SE questionnaire (*M*= 29.55, *SD*= 5.26) and PSC questionnaire (*M*= 30.66, *SD*= 7.94). Pearson's correlation was conducted to assess the relationship between the scores reported on SE and PSC. There was a non-significant relationship between the SE and PSC scores, (r = .13, p > .05, one-tailed). Therefore, the hypothesis can be rejected as evidence suggests that the association between the variables were non-significant.

Analysis of variance (ANOVA). In order to assess any main effects and significant interactions within the context of the vignettes, a 2x2 between-subjects independent ANOVA test was conducted on H4, H5 and H6. The first between-subjects factor was the gender of the hypothetical audience within the vignette, which had two levels (male or female audience). The second between-subjects factor was the audience's level of interest, which also had two levels (interested and not interested).

H4. The context of the vignettes will have a significant effect on SPIN scores

Table 7
2 x 2 ANOVA (gender of audience and level of interest) for SPIN

Variable	F value	df	Error	Sig. value
Gender of audience	.48	1	116	.49
Interest level of audience	.19	1	116	.67
Gender of audience and interest level	1.52	1	116	.22

Note: Statistical values are rounded to two decimal places.

Table 7 (above) shows that the gender of the audience (males or females) did not affect the scores that were reported on the SPIN questionnaire, $F(1,116) = .48$, $p = .49$. In addition, whether the audience was interested or not interested did not affect the scores reported on the SPIN questionnaire, $F(1,116) = .19$, $p = .67$. There was a non-significant interaction between the gender of the audience and the audience's interest level in relation to SPIN scores, $F(1,116) = 1.52$, $p = .22$. In essence, the hypothesis can be rejected, as there was no main effect or significant interaction to indicate that the context of the vignette (gender of the audience or level of interest) had an influence on the scores reported on the SPIN scale.

H5. The context of the vignettes will have a significant effect on SE scores

Table 8
2 x 2 ANOVA (gender of audience and level of interest) for SE

Variable	F value	df	Error	Sig. value
Gender of audience	2.25	1	116	.14
Interest level of audience	.01	1	116	.94
Gender of audience and interest level	1.95	1	116	.17

Note: Statistical values are rounded to two decimal places.

Table 8 (above) shows that the gender of the audience (males or females) did not affect the scores that were reported on the SE questionnaire, $F(1,116) = 2.25$, $p = .14$. In addition, whether the audience was interested or not interested did not affect the scores on the SE questionnaire $F(1,116) = .01$, $p = .94$. There was a non-significant interaction between the gender of the audience and the audience's level of interest, $F(1,116) = 1.95$, $p = .17$. Therefore, this hypothesis was rejected.

H6. The context of the vignette will have a significant effect on PSC scores

Table 9
2 x 2 ANOVA (gender of audience and level of interest) for PSC

Variable	F value	df	Error	Sig. value
Gender of audience	.43	1	116	.51
Interest level of audience	2.20	1	116	.14
Gender of audience and interest level	.24	1	116	.62

Note: Statistical values are rounded to two decimal places.

Table 9 (above) shows that the gender of the audience (male or female) did not affect the scores that were reported on the PSC questionnaire, $F(1,116) = .43$, $p = .51$. In addition, whether the audience was interested or not interested did not affect the scores on the PSC questionnaire $F(1,116) = 2.20$, $p = .14$. There was a non-significant interaction between the gender of the audience and the audience's level of interest, $F(1,116) = .24$, $p = .62$. Therefore this hypothesis was rejected.

Independent t-tests. In order to establish whether the mean differences are significantly different, independent *t*-tests compared the male and female participant scores on SPIN, SE and PSC. For H7, H8 and H9, equal variances were assumed as $p > .05$ (Brace et al., 2012). In order to present results for the one-tailed hypothesis, the *p* value for the two-tailed hypothesis was divided in half (Brace et al., 2012).

H7 Female participants will have a higher SPIN score than male participants.
Female participants scored higher on the SPIN questionnaire (M= 30.15, SD=12.73) as opposed to the male participants (M=21.07, SD= 10.52). The mean difference between the gender of the participants was 9.08. In addition, the 95% confidence interval for the estimated population mean difference was between 4.86 and 13.30. Equality of variances were assumed, and therefore the independent t-test shows that the difference between males and female scores on SPIN is statistically significant, $t(118) = 4.26$, $p < .001$, (one-tailed). In essence, the result suggests that the differences between the male and female SPIN scores did not occur by chance.

Descriptive Statistic

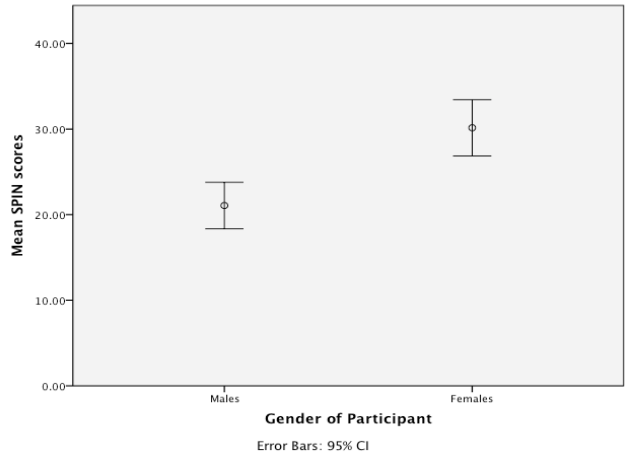

Figure 4. Error bar chart showing the mean SPIN scores for males and females

Figure 4 (above) indicates that there was no overlap between the error bars for male and female participants, and therefore suggests a significant difference between the SPIN scores.

H8 Female participants will have a higher SE score than male participants.
Female participants scored higher on the SE questionnaire (*M*= 29.82, *SD*= 5.37) as opposed to the male participants (*M*=29.28*, SD*=5.18). The mean difference between the gender of the participant was 5.33, In addition, the 95% confidence interval for estimated population mean difference was between -1.37 and 2.44. Equality of variances were assumed, and therefore the independent t-test shows that the difference between male and female scores on SE is non-significant, $t(118) = .55$, $p = .29$, (one-tailed). Therefore, this hypothesis can be rejected.

H9 Female participants will have a higher PSC score than male participants.
Female participants score higher on the PSC questionnaire (*M*= 32.83, *SD*= 8.27) as opposed to the male participants (*M*= 28.48, *SD*= 7.02). The mean difference between the gender of the participants was 4.35. In addition, the 95% confidence interval for the estimated population mean difference was between 1.58 and 7.12. Equality of variances were assumed, and therefore the independent t-test showed that the difference between male and female scores on PSC is statistically significant, $t(118) = 3.11$, $p = .002$, (one tailed).

Discussion
The aim of the current study was to evaluate factors associated with glossophobia in a non-clinical student population. In attempt to assess the factors associated with glossophobia, vignettes were developed to observe whether the gender of an audience or the audience's level of interest would influence scores reported on SPIN, SE and PSC.

Relationship Between SPIN, SE and PSC

The present study revealed a positive relationship between the scores reported on the SPIN and PSC scale, thus supporting H2. In essence, this finding suggests that PSC is a factor associated with glossophobia amongst MMU students. Not only does this finding support the idea that a relationship between PSC and glossophobia exists (George and Stopa, 2008), but it also extends the notion that socially anxious individuals report high scores on PSC scales when being exposed to speaking situations (Clark and Wells, 1995). Moreover, it can be considered that individuals have a tendency to enhance their levels of self-consciousness during speaking situations (Clark and McManus, 2002). Other studies have indicated that there is not a relationship between PSC and glossophobia (Saboonchi and Lundh, 1997). However, it has been recognised that these results have been discovered within non-clinical samples (Saboonchi et al., 1999). Therefore, future research should investigate whether this relationship can be generalised to other population groups.

Further findings revealed that there was not a relationship between SPIN and SE scores, thus rejecting H1. Although this finding contradicts previous research, it has been claimed that low self-esteem is a factor associated with glossophobia (Stein and Kean, 2000). Socially anxious individuals have a tendency to observe speaking situations as a negative experience, which can lead to negative self-evaluation (Glashouwer et al., 2013; Hoffman and DiBartolo, 2000). In order to understand this finding, it has been explained that the sensitivity of self-esteem measures might prevent a relationship between SE and glossophobia to be established (De Jong, 2002). In essence, future research should utilise indirect self-esteem scales to examine whether SE is associated with glossophobia (Ling et al., 2012; Dijksterhuis, 2004).

Research has indicated that SE and PSC are factors associated with glossophobia (Gorrese and Ruggieri, 2013; Darvill et al., 1992). However, there has been a tendency to examine whether these factors are related to each other during the assessment of glossophobia (Duval and Wicklund, 1973). The present study revealed that there was not a relationship between the scores reported on the SE and PSC scale, thus rejecting H3. In line with previous literature (Spurr and Stopa, 2002), it can be considered that there is not a relationship between SE and PSC. Other studies have indicated that public self-consciousness might have a negative consequence on self-esteem (Ickes et al., 1973). However, there is not enough evidence to support the idea that self-consciousness can influence an individual's negative self-evaluation (George and Stopa, 2008). Subsequently, it has been considered that this area of research should focus on examining whether there is an association between SE and PSC during clinical assessments (Spurr and Stopa, 2002).

Gender Differences

Further findings revealed that female participants reported higher scores on the SPIN measure, as opposed to the male participants, thus supporting H7. This finding is reflective of previous research, as it suggests that female speakers have a tendency to report higher prevalence of glossophobia (Visla et al., 2013). In support of H9, the present study indicates that female participants reported higher scores on the PSC scale, as opposed to the male participants. Not only does this finding support the idea that females report high scores on PSC scales (Clark and Wells, 1995), but this finding revealed that the female participants obtained the highest mean score on the PSC scale. In line with previous literature, this highlights the importance of recognising self-consciousness as a factor associated with glossophobia (George and Stopa, 2008). In order to explain this finding, it has been considered that females have a tendency to be timid and reticent during speaking situations (Belsky and Park, 2000). However, it should be noted that the social position of females might have influenced the scores on the SPIN and PSC scale (Baxter, 1999).

Despite the female population reporting higher prevalence in factors associated with glossophobia, it has been noticed that the male population has a tendency to report greater impairments in factors associated with glossophobia (Vîslâ et al., 2013). The present study found that there was a non-significant difference between male and female participants, in relation to the SE scores, thus rejecting H8. Not only does this finding contradict the idea that females have a tendency to report higher scores on SE (Glashouwer et al., 2013), but it also refutes the idea that the male population aim to convey an image of self-confidence during speaking situations (Bruch and Cheek, 1995). In light of this finding, it could be considered that male students might not be reluctant to report low self-esteem, and therefore this finding could be a reflection of the potential impact glossophobia can have on the male population (Rapee and Spence, 2004). However, it contradicts the idea that males are hesitant to express their social anxiety issues, due to the fear of restricting their social development (Bacon and Ashmore, 1995). In an attempt to reduce social barriers that lead males to experience distress during speaking situations (Blöte et al., 2009), future research should consider investigating whether males are reluctant to report low self-esteem (Roberts et al., 2011; McLean and Hope, 2010).

Properties of an Audience

Harb et al. (2003) considered that the properties of an audience may affect an individual's fear of public speaking. However, the present study reported that there was a non-significant effect between the context of the vignette, in relation to the scores reported on the SPIN, SE and PSC scales, thus rejecting H4, H5 and H6. This finding is inconsistent with previous literature (Yah Hau Tse, 2012; MacIntyre et al., 1997), in that the gender of an audience and the audience's level of interest is considered to be associated with glossophobia. In order to explain this finding, it has been acknowledged that individuals tend to focus on environmental cues that maintain their social anxiety levels (Morrison and Heimberg, 2013), and therefore it

should be considered that the method in which these factors were observed might have influenced the scores reported on the scales (Kim, 2012).

It has been considered that vignettes allow an individual to react to a hypothetical situation, as opposed to experiencing a real situation, which would increase their social fears (Deiters et al., 2013; Kim 2012). Vignettes aim to produce a minor-social evaluation threat, which is considered to be an ethical way of assessing factors associated with glossophobia (Dickerson and Kemeny, 2004). However, it has been considered that vignettes aim to act as a mechanism to avoid Hawthorne effects (Gould, 1996). In order to hide their social fears, socially anxious individuals who are being observed might alter their behaviour to portray a different image (Kim, 2012). In essence, it has been argued that observing individuals in an anxiety-provoking environment would increase their social fears (Deiters et al., 2013; Bassett et al., 1973), thus obtaining an accurate evaluation of the factors associated with glossophobia.

Despite previous literature indicating that the gender of an audience and the audience's level of interest influences glossophobia (Rapee and Heimberg, 1997), it has been considered that vignettes might not produce enough social fear for individuals to respond accurately to the factors associated with glossophobia (Spalding and Phillips, 2007). It should be acknowledged that although the findings of the present study contradict previous literature, the participants were not responding a real audience. Not only does this highlight the idea that vignettes should appear to be real and plausible (Barter and Renold, 2000), but it also emphasises the importance of conducting research in a natural environment, which would allow individuals to respond to negative cues from potential audiences (Veljaca and Rapee, 1998).

Limitations and Recommendations for Future Research

It has been considered that an alternative method in which glossophobia could be assessed is through the individual's natural environment. Universities create various opportunities that would allow researchers to observe an individual performing an academic speech. To extend the findings of the present study, it has been recognised that longitudinal studies might be able to examine similar factors during the different stages of academic presentations (Iverach and Rapee, 2013). Not only would this ensure that the method evaluating factors associated with glossophobia is reliable, but it would also acknowledge the development of glossophobia before the condition becomes chronic (Blood et al., 2007).

More importantly, there has been an on-going debate amongst researchers concerning the method in which glossophobia is accurately measured (Cho et al., 2004). Despite self-report questionnaires being considered as an effective method to measure glossophobia (Ezrati-Vinacour and Levin, 2004), it has been considered that future research should adhere to broader instruments, such as SPIN, until pre-

existing instruments have obtained sufficient empirical support to measure factors associated with glossophobia (Osorio et al., 2010).

A final limitation would be the sample population. Although the sample population involved students studying different degree courses at MMU, it has been acknowledged that the findings can only be generalised to MMU students. However, the study provides a foundation for similar research to be conducted in other cities, which would allow individuals to understand the factors associated with their fear of public speaking.

Conclusion

The present study demonstrated the importance of evaluating factors associated with glossophobia in a student population. Not only does this area of research evaluate factors associated with glossophobia, but it also highlights the restrictive elements that can influence individuals to avoid social situations. It was revealed that PSC is a factor associated with glossophobia. Other findings suggest that females report higher scores on SPIN and PSC scales. Extensive research has been conducted to associate factors with glossophobia. However, the present study is an update in research and encourages researchers to give a hesitant group of individuals a voice in literature.

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