Journal of Education & Humanities Research (JEHR)
Institute of Education & Research (IER), University of Balochistan, Quetta-Pakistan.
Volume: 12, Issue-II, 2021; ISSN:2415-2366 (Print); 2710-2971 (Online)

URL: http://web.uob.edu.pk/uob/Journals/jehr/jehr.php
Email: jehr@uob.edu.pk

"Impact of Math's Anxiety on Student's Attitude towards Quantitative Research at Higher Education Level"

Nargis Shamim[1], Muhammad Akhtar Kang[2]

1. *Department of Education, Faculty of Social Sciences and Humanities Hamdard University, Karachi, Pakistan*
2. *Department of Education Hamdard University, Karachi, Pakistan*

Received: ***30th July, 2021:*** **Accepted:** ***22nd November, 2021:*** **Published:** ***31st December, 2021:***

KEY WORDS
Mathematics Anxiety, Attitude, Avoidance, Math performance, Quantitative

ABSTRACT

The role of mathematics in every aspect of life is beyond any doubt. Despite of its positive contributions there are several challenges which are attributed to it. The present study is an attempt to examine the Mathematics anxiety and its impact on the attitude of avoidance by the MPhil research scholars currently enrolled in public private universities in Karachi Sindh. This study is quantitative in nature as it examines the relationship between variables by using Likert scale survey questionnaire. Simple random sampling was used and in total 400 questionnaires were floated in public and private sector universities in Karachi. The gathered data was analyzed by using correlation and regression analysis. The findings of the study confirm the presence of impact of math anxiety on attitude of avoidance in Pakistani students. This requires concerned corners to examine and manage the situation for effective contribution of MPhil scholars at every level in the country. Results of the study paved need for exploring other dimensions like culture impact on this relationship. Further need for out of the box thinking in teaching students challenged by math anxiety also appeared as fruition of this effort.

INTRODUCTION

The world we live in is one of the greatest creations of the Almighty. This greatness is generally attributed to the balance or the equilibrium amongst the ingredients of different types, which compelled scholars like James Jeans to suggest the presence of a Mathematician behind such a wonderful creation (Livio, 2009, p. 4). Livio (2009) sees mathematics everywhere whether it in social science, cosmos, medical science or military intelligence. Taking this thought to a higher level researcher like Pietrocola (2010) sees mathematics as the language of nature which is regarded as one of the oldest disciplines known to humanity (Krantz, Steven, 2006, p. iii). Despite of the historical existence of Math's it was in the last century that several problems were observed with learning mathematics. This problem was first identified by Gough (1954) who discussed the report of a teacher who believed that her female students developed some sort of "Mathphobia". On the other hand the second notable contribution was made by Dreger and Aiken (1957) who added mathematical elements to existing Taylor manifested anxiety scale and call it numerical anxiety scale (Ashcraft & Moore, 2009). Lately, mathematics anxiety seems gaining attention of the researchers as web of science indicated total of 1328 citations from 2002 to 2021. Out of which 51% of the total citations were observed to be made by education discipline alone; which in a way is the evidence of growing interest of researchers in the domain Fig 1. The important thing which needs to be kept in mind is that these numbers reflecting publications in top indexed databases like SSCI, ESCI etc. this record indicated a significant contribution of 1149 publications from 1991 to 2021.

LITERATURE REVIEW

Mathematics Anxiety is a reality that humanity is currently exposed to, research indicates that almost one out of every five students is not comfortable with mathematics tasks (Eden, Heine, & Jacobs, 2013). This non conformability often leads to a situation where these students start avoiding mathematics and related tasks, hence their avoidance attitude becomes hindrance in their professional growth and later impacting the overall society. Recently Rozgonjuk et al., (2020), whilst exploring the literature on Mathematics anxiety in STEM and social science students, described it as " feelings of panic and helplessness when asked to solve a mathematical task or problem". Borrowing wisdom from literature they pointed several reasons which they considered as the reason of development of this anxiety. To them these are the result of pedagogy or use of subject of Mathematics as a tool to punish which in a way results in creating an extreme negative challenge. (Jolejole-caube & Abocejo, 2019). Further they discussed three categories of mathematical anxiety which are "mathematics test anxiety, numerical anxiety, and abstraction anxiety".

Taking the debate to a higher level Aarnos & Perkkilä (2012) described three causes for mathematics anxiety which are "environmental, personal, and cognitive". They explained that when the challenge arise as a result when student expresses lack of ease with the teacher or class then this lies in the domain of environment. Whereas when there are issues of fear of ill experiences they represents personal (causes). Lastly when "intelligence" or the skills set of the student is not up to the level where the grasping subject basis cannot be achieved, falls in the domain of cognitive cause. In a different but contrasting

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

study Shabbir, Jabeen, & Masood (2020) shared Arem (2010, p 30) efforts in which he highlighted several physical (Headache, Muscle Spasm etc.) and psychological symptoms (Confusion, going blank etc.).

According to (Royse & Rompf, 2017), the students who do social work have more math anxiety as compared to other non-statistics or non-social students; as non-traditional students are not required to fulfill the requirements as is required from the high school or students pursuing to a higher educational level. They also suggested in their study that with the communication and the delivery mechanism the instructor can somehow minimize the anxiety in students towards math and they can learn to manage and confidently take attempt to solve math critical calculations. Secret, Ford, & Rompf (2014) found that students with less statistical knowledge find it difficult to go with the quantitative or calculation based research study. They're reluctant towards perceiving these kinds of studies which result in math's anxiety. This negative attitude towards math is one of the major barriers towards learning. Mathematics anxiety is a well-known and well recognized term and somehow a measure of students' performance.

Students' reluctance towards avoiding quantitative research study were observed to be students who hold lower level of statistical knowledge which cause anxiety in them as higher level of math anxiety and avoidance of quantitative research results in lower performance in research. Mathematics is a fundamental subject towards the development of any country (Dowker, Sarkar, & Looi, 2016). Cumhur, Faculty, Tezer, & Faculty (2019) examined the mathematics impact on university student's performance and it builds anxiety. Most of the students feel stress and the reason is math anxiety. A fear of taking math's subject is really prominent in female students. Math's facilitates people understanding towards the world but the fear and stress of math's create a negative impact in their learning process and exploration of things as well as creativity (Peker & Ulu, 2018). Anxiety is a feeling which affects the life negatively thus results in weak performance (Kose, Yilmaz & Goktaz, 2018).

Students with mathematics anxiety are less motivated and less confident which at the end result in poor performance (Sokolowski, Hawes & Lyons, 2019). Choe, Jenifer, Rozek, Berman, & Beilock (2019) noted that math's anxiety is a negative feeling towards math's which often leads to avoiding the subject. This avoidance is visible as the Individuals having math anxiety are the one who avoid math's especially taking fewer math related courses. Math anxiety creates the attitude of avoidance in students and this makes them reluctant towards taking risk in pursuing any course that involves math's. Punaro and Reeve, (2012, in their study found that people show much more anxiety, stress and other negative attitudes towards math's as compared to other academic subjects. This nervousness, confusion, and avoidance results in lower student performance (Wahid & Razaq, 2013).

Ramirez et al. (2018) stressed on the need of intervention from teachers and research scholars to play their part in enabling students to either avoid this challenge or manage the situation effectively. To achieve the desired target they consider this of worth to know the causes of this problem along with specific characteristics of student who are prone to such challenges. The complexity of the existence of a problem with the students could be judged from the fact that even in the developed country like USA approximately a

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

significant 80% of community college students are victim of mathematics anxiety (Chang & Beilock, 2016). In addition organization for Economic Cooperation and Development (2013) also pointed towards prevalence of the math anxiety in almost one third of 15 years old students as they find themselves in oblivion when they have to attempt mathematics.

Briefly, a significant number of researchers agree with the notion that MA is one of the main reason for poor performance (Hembree & College, (2015); Carey, Hill, Devine, & Szücs (2016): Heilman (2015): Wu & Menon (2012)). THE Mathematics Anxiety is a sort of challenge which is visible at any age group which in a way can result in avoidance attitude (Carey et al., (2016). For instance in case of research student with a background in social sciences tends to avoid methods which involve mathematics or statistics which are source of drawing inferences in a quantitative inquiry. Ashcraft & Moore (2009) provided a supporting argument in this regard as they reported students with MA avoids classes or major course that involves mathematics.

The question that begs attention here is the reason why students with MA issue avoids math's or related fields. In this (Buckley, 2013) indicated that a large part of this attitude of avoidance emerges because of "values" and "Control" which are central themes of Pekrun Theory on emotions. The theory indicates that lower of these two could lead to avoidances of Mathematics. In-depth analysis of literature highlighted theoretical linkages of the subject. For instance several studies discussed in details about various theories ad models which are generally used when Mathematical Anxiety is discussed Carey et al., (2016); Buckley (2013) . For instance Carey et al (2016) whilst describing the direction of the relation between Math Anxiety and Math performance mentioned two possibilities. To them where they see performance as the cause of future anxiety about the subject. This dimension of the argument is referred to as deficit theory. Whereas the other way relation that is between anxiety and performance whereby increase in anxiety minimizes the performance lies in the domain of "debilating anxiety model".

In this backdrop the present study aims to examine the impact of Mathematical anxiety on the attitude of research students (MPhil) to avoid quantitative research. Large part of choosing these two variables together also got support from the work of Rozgonjuk, Kraav, Mikkor, Orav-puurand, & Täht (2020) who revealed that generally Mathematical anxiety is examined together with attitude towards mathematics. Drawing on wealth of literature on Mathematics anxiety and related constructs Eden et al (2013) reiterated three assumptions. These assumptions, were previously tested and results confirmed about their existence and impact, mentions it as a unique concept, intelligence limitation in grasping the concept, and existence of a negative relationship with mathematics performance.

RESEARCH QUESTIONS

- How much Math Anxiety influence the research attitude of the students in Pakistan?
- Does the Mathematics anxiety leads to development of attitude of avoidance?

RESEARCH OBJECTIVES

- To critically review the literature on Mathematics anxiety for identifying the challenges it poses to research students.

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

- To examine the impact of Mathematics Anxiety on the attitude of avoidance of research scholars.

HYPOTHESES

- There is the relationship between Mathematics Anxiety and avoidance attitude in research students in Pakistan.
- The more student is facing Math Anxiety the higher chances are them

that he/ she will avoid quantitative analysis.

METHODOLOGY

The present study is Quantitative in nature as this is an attempt to check the impact of math anxiety on the student's attitude of avoidance towards quantitative research. The data was gathered by utilizing the survey instrument of Allen (2001) which was adopted and modified as per the needs of the study. The survey instrument touched upon areas which provides information regarding anxiety in attending courses or attempting paper.

Putting simply Allen (2001) specifically developed an instrument to touch upon areas like "attitude, feelings, and belief". Whereas for a mathematical anxiety survey he used Betz (1978) Mathematics Anxiety Scale of Fennema and Sherman (1976), from variety of other scales like MARS (Mathematical Anxiety Rating Scale), MASC (Mathematical Anxiety Scale for Children), Abbreviated Math Scale etc. Eden work on these lines is of worth to mention as they described different instrument and their suitability with the target population. By way of illustration information regarding these areas was captured by asking questions like "mathematics make me feel uncomfortable and nervous". Similarly, the other question includes "I wouldn't bother to take more math courses" and "I have usually been at ease during math tests / course".

Similarly, when it comes to attitude of avoidance questions were asked like "I don't want to use mathematics (quantitative research) in the future. Further questions were asked about "I avoided taking math classes in the university".

The target audience for this study includes master's level student pursuing their MPhil / Master's degree (17 -18 years) from different universities of Karachi. These respondents are from social science, humanity, and management science faculties. The main reason for the selection of these students as the target audience was because Mathematics is not an area of their specialization or major.

These students were approached by visiting different universities like Karachi University, Dow University, SZABIST university, Iqra University, Bahria university, Hamdard University, and Federal Urdu University. Nowadays the university classes are seriously challenged by the pandemic situation and students are taking online classes, which is why faculty office / Academic registrar office/ QEC office/ were requested for permission to approach research scholars for their participation in the survey. Keeping in view the social distancing policy the university asked to provide questionnaires that they can share with willing participants for their viewpoint. In total 400 questionnaires were shared with universities authorities out of which 49 returned of which only 41 were usable.

Out of these 400 only 8 forms were rejected because they were incomplete and

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

overwritten. Generally social science is known for the low response rate which is also visible in this study as the response rate is 10.2 which is almost lower range described in literature.

The gather data was analyzed by applying correlation and regression analysis using SPSS software. The results obtained by running descriptive statistics, reliability analysis, correlation and regression analysis and are presented in tabular as well as graphic forms.

RESULTS

RELIABILITY STATISTICS

Cronbach's Alpha	N of items
0.793	17

The above table shows the Cronbach's alpha value of variables. It is the measure of internal consistency and how strongly the variables are related to each other. It is also used for the measurement of scale reliability. The reliability statistics are showing that the alpha value is .793 which is greater than 0.7 which suggests it is reliable and acceptable.

DESCRIPTIVE STATASTICS

TABLE 1

	Mean	Std. Deviation	N
Math Anxiety	1.8244	.50536	41
Attitude of avoidance	1.7317	.50527	41

According to the results, the math anxiety has an impact on student's avoidance attitude towards this, with a mean score of 1.824 which is perfectly linear correlation mean score.

CORRELATIONS

TABLE 2

		Math Anxiety	Attitude of avoidance
Math Anxiety	Pearson Correlation	1	.387*
	Sig. (2-tailed)		.012
	Sum of Squares and Cross-products	10.216	3.954
	Covariance	.255	.099
	N	41	41
Attitude of avoidance	Pearson Correlation	.387*	1
	Sig. (2-tailed)	.012	
	Sum of Squares and Cross-products	3.954	10.212
	Covariance	.099	.255
	N	41	41

***. Correlation is significant at the 0.05 level (2-tailed).**

The above table shows the correlation between math anxiety and student's attitude of avoidance. It was found through the mean and standard deviation. The correlation table indicated that there exists a high positive association between math anxiety and students' avoidance attitude (r= .387, n=41, p= .012)

REGRESSION

TABLE 3

After applying the correlation test, the linear regression analysis has been applied to check the influence of the independent variable on the dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.387[a]	.150	.128	.47181

a. Predictors: (Constant), Math Anxiety

b. Dependent Variable: Attitude of avoidance

The model summary of the data. The value of R is 0.150 and it represents simple positive correlation. The R square shows the

Corresponding Author's Email: nargis.s.tariq@gmail.com

total percent of variance in the attitude of avoidance (dependent variable) can be explained by the math's anxiety (independent variable). Here, it is 15% which means changes in math anxiety dictates 15% change in attitude of avoidance. Furthermore, the difference between R-square and adjusted R-square is less than 5% which signifies that there is no sample error.

ANOVA
TABLE 4

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.530	1	1.530	6.875	.012[b]
	Residual	8.682	39	.223		
	Total	10.212	40			

a. Dependent Variable: Attitude of avoidance

b. Predictors: (Constant), Math Anxiety

Anova shows over all the significance of a model. Also, the significance of Anova shows the significance of goodness of fit. Cutoff of F is 4 which show it is significant. Here F-statistic obtained is 6.875 which is greater than 4 which means it is significant. Moreover, as Sig value is less than 0.01 it is significant at 1%.

COEFFICIENT
TABLE 5

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.026	.279		3.673	.001		
	Math Anxiety	.387	.148	.387	2.622	.012	1.000	1.000

a. Dependent Variable: Attitude of avoidance

The table shows the impact of math anxiety on the student's attitude of avoidance. Here, the coefficient of social media is positive 0.387 which suggests that there is a direct relationship between math anxiety and attitude of avoidance. Furthermore, if math's anxiety increases by one unit, the avoidance attitude of students will increase by 0.387 units. This relationship is statistically significant as t value obtained is 2.622 and is greater than 2. This significance is also shown by sig value which is less than 0.01 so we conclude that model is significant at 1%.

DISCUSSION

The research shows that the math anxiety has an impact on the student's attitude towards conducting quantitative research. The above analysis is conducted to see the relationship between math anxiety and student's attitude towards doing quantitative research of Pakistani MPhil students. The analysis has shown that there is an inverse relationship between. The impact of the independent variable on dependent variables is gauged through the regression analysis and correlation by checking separately one variable impact on another that is independent variable on each depend variable separately.

The sig value is less than < 0.05 shows the desirable results. Overall the analysis of this study is also indicative of the direction that the math anxiety plays a significant role in avoidance attitude in students. After analyzing and interpretation findings are supporting the narrative of the research that there is an influence of presence of math anxiety towards students in choosing statistical or quantitative based research.

The result of this study are in a way similar to those of (Namkung, 2019) who

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

reported that anxiety exhibits a negative impact which in that case was representative of performance. This means that student's performance declines if they had developed some sort of mathematical anxiety. This in a way explains that this relationship is not affected by the grade levels, although they suggested that previous achievement in the subject does matter. In the same vein Foley et al., (2017) agreed with the thought that this problem is observed in individual of all ages and it is a global challenge. The salient feature of their argument was about questioning the approach to find a single remedy for all. Their narrative was based on the thought provoking idea of the presence of different cultures which makes it difficult for opting one size solution for all such challenges across the globe. Similarly Aanor (2012) study in a way provides an answer to the reasons behind student avoiding quantitative research which can be because of teachers, classroom environment, personal and cognitive. These arguments stressed on the needs to first identify the reason as early as possible, and secondly addressing and managing the impact at the possible early stage. Any delays in this can limit the ability of individuals in developing problem solving skills, decision making skills, and becoming a contributing person that he can be. In modern Pakistani society the impact of such failure could be more damaging as in recent years the recruitment for public sector organizations requires candidates to go through a certain testing mechanism like NTS (Sultan et al 2015). These tests evaluate the candidates for their cognitive skills (problem solving skills) and subject specific knowledge which is a serious challenge for candidates with Mathematics Anxiety.

CONCLUSION

One of the signs of intelligence in his world is the presence of abilities for solving problem solving skills. The current study focused on evaluating the relationship between Mathematics anxiety and avoidance attitude. This study was limited as the data was only collected from students pursuing higher levels of education i.e. MPhil. The study reveals a significant correlation between math anxiety and student's avoidance attitude towards quantitative research usage. The presence of quantitative skills plays a major role in performance and creativity of students. The avoidance attitude towards math is the result of lower statistical knowledge and risk avoidance (Opting Quantitative Analysis). In simple words this means that negative emotional response among students triggers the avoidance attitude towards quantitative study. This has impact on the academic achievements of students as well development of skills necessary for making contribution at higher positions. With In-depth analysis backed by critical review it is safe to suggest that attention should be given to students by teaching them in a more tailor made approach rather following traditional (Stereotypical) pedagogy.

RECOMMENDATIONS

It is also necessary to avoid using subjects like Math as a tool of punishment, the use of this strategy could permanently create fear in the student mind rather than getting them involved in learning ways to grasp the subject theme. The teachers and parents need to encourage the Math Anxious (student/ Individual) to give your best rather than developing a fear of failure. Drawing on these it is also proposed that specific training to teachers to be arranged as experience of these will enable them to accurately identify this challenge and then dealing with them in the

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

best possible manner. In a nutshell, critical thinking skills need to be instilled not only in the students but teachers as well. Mathematic Anxiety resulting from teacher who himself is not well versed with the subject and its delivery to a variety of different students is by not able to teach savants who have the ability to ask critical questions.

Future research possibilities include identification of factors of Mathematical anxiety especially those which includes specific segments of the subject which causes this kind of challenge (Stoehr, 2017). Apart from this there are possibilities of looking into culture (Foley et al., 2017) and the subculture of Pakistani society in general and provincial wise in specific when checking this impact of the relationship between mathematics anxiety and attitude of avoidance. Ramirez et al. (2018) also provided a food for thought for conducting research on Math anxiety and avoidance by using the vector of "motivated forgetting". The question which needs to be focused in this regard relates to the need for identifying reasons of student's taking refuge behind "motivated forgetting".

This seems to be a crude attempt of student to reduce the stress of knowing less or hiding their limitation of fully demonstrating what they know of the subject. Digging deeper into the these concepts, in Pakistani environment where teaching methodology, resource limitation of students, and higher expectations of earning after education completion makes it necessary for them to have equipped with problem solving skills, will definitely add to the existing debate. In the same vein grounds are also available to examine the second language impact, testing system like NTS, existence of Mathematics anxiety and attitude of avoidance.

The critical reason for looking at second language use as a factor for research specifically as they it can be the reason of anxiety rather mathematics. This research direction can help to reach facts close to reality that exist in developing country like Pakistan. It is these challenges which makes it of worth to putting these hypotheses at the test as unlike develop part of world culture of Pakistan provides an opportunity for research.

References

(Aarnos, 2012)Ashcraft, M. H., & Moore, A. M. (2009). *Mathematics Anxiety and the Affective Drop in Per* (Allen, 2001) *formance*. 197–205.

(Buckley, 2013)Chang, H., & Beilock, S. L. 2016. The math anxiety-math performance link and its relation to individual and environmental factors: A review of current behavioral and psychophysiological research. Current Opinion in Behavioral Sciences, 10, 33–38.

((Jolejole-caube, 2019)Dowker, A., Sarkar, A., & Looi, C. Y. 2016. *Mathematics Anxiety : What Have We Learned in 60 Years ? 7*(April). https://doi.org/10.3389/fpsyg.2016.00508

Eden, C., Heine, A., & Jacobs, A. M. 2013. Mathematics Anxiety and Its Development in the Course of Formal Schooling — A Review. *Scientific Research*, *4*(6), 27–35.

(Foley, 2017)Heilman, R. M. 2015. *Neural correlates of math anxiety – an overview and implications*. *6*(September). https://doi.org/10.3389/fpsyg.2015.01333

Corresponding Author's Email: nargis.s.tariq@gmail.com

Jolejole-caube, C., & Abocejo, F. T. 2019. *European Journal of Education Studies ANXIETY TOWARDS MATHEMATICS AND MATHEMATICS PERFORMANCE OF GRADE 7 LEARNERS*. 344–360. https://doi.org/10.5281/zenodo.2694050

Kose, S., Yılmaz, S. K. & Goktas, S. 2018. The relationship between exam anxiety levels and sleep quality of senior high school students. Journal of Psychiatric Nursing, 9(2), 105–111. doi:10.14744/phd.2018.05025

Krantz, Steven, G. 2006. *An Episodic History of*.Livio, M. 2009. *Is God a mathematician?* New York: Simon & Schuster; Illustrated edition.

Namkung, J. M. 2019. *The Relation Between Mathematics Anxiety and Mathematics Performance Among School-Aged Students : A Meta-Analysis*. https://doi.org/10.3102/0034654319843494

Peker, M. & Ulu, M. 2018. The effect of pre-service mathematics teachers' beliefs about mathematics teaching anxiety. International Journal of Instruction, 11(3), 249–264. doi:10.12973/iji.2018.1138a

Pietrocola, M. 2010 Mathematics structural language of physics thought. In: M. Vicentini & E. Sassi (Eds.), *Connecting research in physics education with teacher education* (2 edn., Vol. 2, pp 35–48). New Delhi: Angus & Grapher Publishers.

Punaro, L., and Reeve, R. 2012. Relationships between 9-year-olds' math and literacy worries and academic abilities. Child Dev. Res. 2012:359089. doi: 10.1155/2012/359089

Ramirez, G., Shaw, S. T., Maloney, E. A., Ramirez, G., Shaw, S. T., Maloney, E. A., … Maloney, E. A. 2018. *Math Anxiety : Past Research , Promising Interventions , and a New Interpretation Framework Math Anxiety : Past Research , Promising Interventions , and a New Interpretation Framework*. *1520*. https://doi.org/10.1080/00461520.2018.1447384

Royse, D., & Rompf, E. L. 2017. *Math Anxiety*. *7797*(April).

Rozgonjuk, D., Kraav, T., Mikkor, K., Orav-puurand, K., & Täht, K. (2020). Mathematics anxiety among STEM and social sciences students : the roles of mathematics self-efficacy , and deep and surface approach to learning. *International Journal of STEM Education Https://Doi.Org/10.1186/S40594-020-00246-Z*, *7*(46), 11.

Secret, M., Ford, J., & Rompf, E. L. 2014. Journal of Social Work Education Undergraduate Research Courses. *Journal of Social Work Education*, *39*(3), 37–41. https://doi.org/10.1080/10437797.2003.10779146

Corresponding Author's Email: *nargis.s.tariq@gmail.com*

Shabbir, M., Jabeen, S., & Masood, S. 2020. *An Exploration of Reasons and Relationships between Female Teachers ' Anxiety towards Teaching Mathematics and Students ' Achievement*. *4*(2), 670–679.

Sokolowski, H. M., and Necka, E. A. 2016. Remediating math anxiety through cognitive training: potential roles for math ability and social context. J. Neurosci. 36, 1439–1441. doi: 10.1523/JNEUROSCI.4039-15.2016

Stoehr, K. J. 2017. *Mathematics Anxiety : One Size Does Not Fit All*. https://doi.org/10.1177/0022487116676316

Corresponding Author's Email: nargis.s.tariq@gmail.com