

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

Dr. Ajay Kumar^{1*}

ABSTRACT

Introduction: Attitude towards women in any cohort determine acceptance of women in untraditional roles like fighter flying. Indian Air Force (IAF) allowed women in fighter flying since the year 2015. There were eight women in fighter flying in IAF as of July 2019. The study was conducted to understand the attitude towards women among the IAF fighter aircrew. The aim of the study was to assess the attitude towards women in fighter flying among fighter aircrew. The objective of this study was to obtain a baseline data for use in the future for evaluating any change in attitude towards women due to change in policy by allowing women in fighter flying. **Material and Methods:** Short version of Attitude towards women scale (AWS) and fifteen validated in-house prepared questionnaires related to views on women in fighter flying in IAF (IAF Questionnaire- IAFQ) was used to assess the attitude towards women in fighter flying among fighter aircrew. Statistical analysis was done using SPSS 20 with confidence interval 95% and significance level set at $p < 0.05$. **Results:** 16% of male fighter pilots and 38% of female fighter pilots of the IAF participated in the study. The mean Attitude Towards Women Scale score (MAWSS) was 63.95 ± 7 (ie 85.3%). The responses to IAFQ were significantly associated with the AWSS. **Discussion:** IAF is known for its progressive, professional and a responsible attitude globally. However, this has been assessed objectively for the first time in the form of attitude towards women using short version of AWS. The results are in line with general perception and has brought out objectively that fighter aircrew of IAF are egalitarian and profeminist. The decision to allow women in fighter flying is likely to be a great success as there will be full support from the male fighter aircrew in IAF. **Conclusion:** The study has strengthened the view that fighter pilots of the IAF are egalitarian and profeminist. Their prevailing attitude towards women in fighter flying will allow seamless integration of women fighter pilots in the fighter squadrons of IAF.

Keywords: Attitude Towards Women, Fighter Flying, Indian Air Force, women in flying

Attitude towards women in any cohort determine acceptance of women in an untraditional role like fighter flying. Espirit –de –corp, cohesion and discipline are values that unite the fabric of an effective combat unit. Successful integration of women into this role rests in part upon their acceptance by male combatants. The fighter

¹Assistant Professor (Aerospace Medicine), Institute of Aerospace Medicine Indian Air Force, Bangalore, India
**Corresponding Author*

Received: August 01, 2021; Revision Received: September 19, 2021; Accepted: September 30, 2021

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

pilot is akin to a modern knight in shining armor. When flying over enemy territory, they risk injury, death and capture. During routine training missions also, they risk ejection which may result into severe injury or even death. A fighter pilot is a highly educated individual who work in disciplined teams (co-pilot, Weapon System Operator, other pilots in formation, Air Traffic Controller, Fighter Controllers etc) dropping bombs and missiles with precision. They are surrounded by high technology and elaborate complex support systems [1]. To fit into such a complex techno-savvy environment one has to prove their mettle among the peers. The selection and training of fighter aircrew is such that individuals “who does not have it” in them would not succeed and get screened out at a very early stage. This process is capability based rather than gender based. However, military is an institution with roots in time honored masculine traditions. Historically, men in the armed forces have resisted and been hostile toward female integration. Today, women are well integrated into most aspects of military life except the combat. The need to use women and ensure greater gender parity is usually recognized at the top of the command structure as happened in Indian Air Force (IAF) when it was announced that women will be allowed in fighter flying in 2015 for three years on an experimental basis. The first batch of three women fighter pilots got commissioned in 2016. There are eight women in fighter flying in IAF as of July 2019 [2]. Male pilot acceptance of women as fighter pilots is important if women are to become members and leaders of effective fighter squadron. The attitude towards women among fighter aircrew may impact integration of women in the male dominated fighter squadrons and may affect performances if impacted adversely. Hence, it is important to understand the prevailing attitude of male fighter pilots towards women in fighter flying in IAF for success of this historic decision. This may allow timely institution of corrective measures to change the prevailing attitude if required.

A pilot study conducted in the Indian Air Force revealed that though the fighter aircrew were profeminist and egalitarian, less than half (41%) believed that women could fly a fighter aircraft and only 32% believed that women should be allowed to fly fighters in IAF [3]. None of the aircrew in the study had worked with women fighter pilots, however, they had pre-conceived notion based on their perception and attitude towards them. The aim of the study was to assess the attitude towards women in fighter flying among fighter aircrew. It has been shown that at times policy decision leads to change in attitude of a cohort. The decision to allow women in fighter flying may result in change in attitude towards them over a period of time. This study may act as a baseline data for future study as well. Hence, the objective of this study was to obtain a baseline data for use in the future for evaluating any change in attitude towards women due to change in policy by allowing women in the fighter flying in the IAF.

MATERIAL AND METHODS

The study was questionnaire based using an in-house prepared survey questionnaire and short version of Attitude towards Women Scale (AWS) developed by Spence and Helmreich [4]. The Indian Air Force Questionnaire (IAFQ) was prepared to understand acceptability of women in fighter flying among the respondents which consisted of fifteen set of questions where thirteen of them (except question no 9 and question no 15) had responses in the form of ‘yes’, ‘no’ and ‘can’t say’.

The Attitude towards Women Scale which is subtitled, “An objective instrument to measure attitudes toward the rights and roles of women in a contemporary society” is now over 4 decades old. The original AWS contained 55 items which was derived from a measure devised by Kirkpatrick in 1936 [5]. Spence developed the AWS to assess people’s beliefs

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

about the responsibilities, privileges, and behaviors in a variety of spheres that have traditionally been divided along gender lines but could, in principle, be shared equally by men and women. Many short versions including 15 items and 25 items were developed which correlated well with the original scale. The short version of AWS containing 25 items was used in the pilot study before commencing this large-scale study with excellent results [3]. The same short version of AWS was used in this study which contains twenty-five questions, each to be answered on four-point scale ranging from 0- Strongly Agree to 3- Strongly Disagree. Of the twenty-five questions twelve are reverse scored. The numerical sum of all the responses gives Attitude towards women score. The score can vary from 0 to 75. However, some researchers have scored it as 100 point scale which is essentially percentage of 75 [3]. Higher score meant pro-feminist and egalitarian attitude. Respondents were asked to tick one of the options without revealing their identity. Author believed that anonymity would allow overcoming any inhibition in answering gender-based questions freely. The data thus obtained were analysed using SPSS 20. Confidence interval and significance were set at 95% and $p < 0.05$ respectively.

RESULTS

Total 219 randomly selected fighter aircrew voluntarily participated in the study. The data sheet was prepared in a manner that it did not require any personal information to be filled. The author believed that response on a sensitive socio-political issue like gender- parity is more likely to be truthful if it is anonymous. Three respondents were female and rest were male. As per the open-source information, the estimated total number of pilots calculated based on total number of fighter aircraft and pilot vs cockpit ratio in the IAF is 1337 fighter pilots, 745 helicopter pilots and 498 transport pilots [6, 7]. As per the news report there are eight female fighter pilots in the IAF [2]. As per these estimates, approximately 16% of male fighter pilots and 38% of female fighter pilots participated in the study. The mean AWS score was 63.94 ± 7 (Figure 1). The mean AWS Score for male aircrew was 63.95 ± 7 and for female aircrew was 63.33 ± 11.5 . There was no statistical difference in mean AWS score between male and female aircrew ($p > 0.05$). Figure 2 shows rank of aircrew (in percentages) participating in the study. ANOVA revealed no significant difference in mean AWS score among the aircrew of the different ranks and gender ($p > 0.05$). Mean flying hours of aircrew participating in the study was 674.49 ± 666.86 hours (range 0- 4700 hours). Mean year of service of the aircrew was 5.12 ± 4.14 years (range 0.08- 15 years). As expected, flying hours and years of service had a strong correlation of 0.89 ($p < 0.001$), however, there was no significant correlation between flying hours, years of service and AWS score.

The response to IAF questionnaire (IAFQ) is placed in Table 1-15. Cross tabulation was done to assess the association among rank, gender, response to IAF questionnaire and association among responses to related IAF Questionnaires.

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

Figure 1. Histogram of mean Attitude Towards Women Scale Score (n=219)

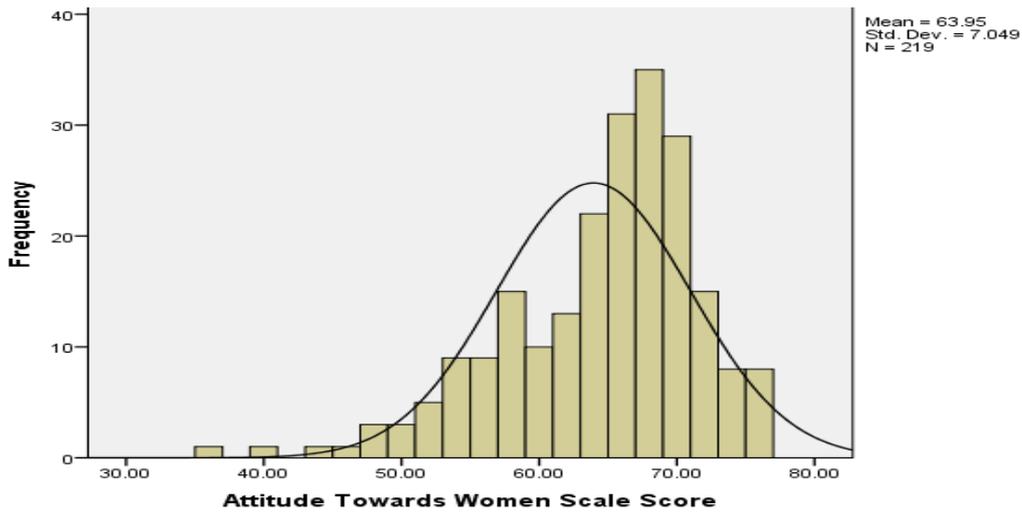


Figure 2. Rank of Aircrew (%) participating in the study (n=216)

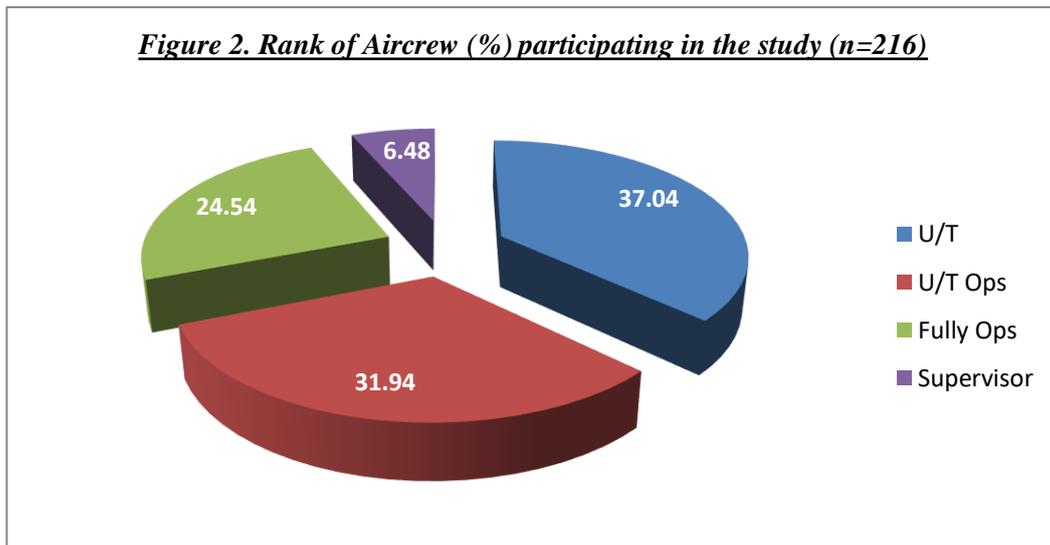


Table 1. IAFQ1. Do you think women should be allowed to fly in IAF as pilot?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	211	96.3	96.3	96.3
No	2	.9	.9	97.3
Can't Say	6	2.7	2.7	100.0
Total	219	100.0	100.0	

Table 2. IAFQ2. Do you think women are capable of flying military missions?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	198	90.4	90.4	90.4
No	4	1.8	1.8	92.2
Can't Say	17	7.8	7.8	100.0
Total	219	100.0	100.0	

Table 3. IAFQ3. Do you think women pilots are fit for combat missions?				
	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	175	79.9	79.9	79.9
No	10	4.6	4.6	84.5
Can't Say	34	15.5	15.5	100.0
Total	219	100.0	100.0	

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

Table 4. IAFQ4. Do you think women can fly a fighter aircraft?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	205	93.6	93.6	93.6
No	3	1.4	1.4	95.0
Can't Say	11	5.0	5.0	100.0
Total	219	100.0	100.0	

Table 5. IAFQ5. Do you think women are hindrance in functioning of squadron of a flying unit?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	14	6.4	6.4	6.4
No	175	79.9	79.9	86.3
Can't Say	30	13.7	13.7	100.0
Total	219	100.0	100.0	

Table 6. IAFQ6. Do you think 'mixed-gender crew' (male & female pilots) compliment as crew in the cockpit?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	121	55.3	55.3	55.3
No	9	4.1	4.1	59.4
Can't Say	89	40.6	40.6	100.0
Total	219	100.0	100.0	

Table 7. IAFQ7. Do you think 'mixed-gender crew' (male & female pilots) can improve functioning of squadron of a flying unit?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	96	43.8	43.8	43.8
No	10	4.6	4.6	48.4
Can't Say	113	51.6	51.6	100.0
Total	219	100.0	100.0	

Table 8. IAFQ8. Do you think women should be allowed to fly fighter aircraft in IAF?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	198	90.4	90.4
	No	9	4.1	94.5
	Can't Say	12	5.5	100.0
	Total	219	100.0	100.0

Table 9. IAFQ 9. What is your main concern when you are working in squadron?

	Frequency	Percent	Valid Percent	Cumulative Percent
Affairs at home	8	3.7	3.7	3.7
Problem of Squadron	140	63.9	63.9	67.6
Treatment by your subordinate and seniors	16	7.3	7.3	74.9
Gender bias in allocating task	2	.9	.9	75.8
Others	53	24.2	24.2	100.0
Total	219	100.0	100.0	

Table 10. IAFQ10. Do you think you are comfortable working with opposite gender in squadron/unit/cockpit?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	200	91.3	91.3	91.3
No	4	1.8	1.8	93.2
Can't Say	15	6.8	6.8	100.0
Total	219	100.0	100.0	

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

Table 11. IAFQ11. Do you think IAF is matured as an organization to allow women in fighter flying?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	165	75.3	75.3	75.3
No	16	7.3	7.3	82.6
Can't Say	38	17.4	17.4	100.0
Total	219	100.0	100.0	

Table 12. IAFQ12. If women were allowed to fly fighter aircraft, will you allow your daughter/ female acquaintances to join IAF as a fighter pilot?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	198	90.4	90.4	90.4
No	6	2.7	2.7	93.2
Can't Say	15	6.8	6.8	100.0
Total	219	100.0	100.0	

Table 13. IAFQ13. Do you think women are capable of flying fighter aircraft such as Su-30 MKI?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	189	86.3	86.3	86.3
No	3	1.4	1.4	87.7
Can't Say	27	12.3	12.3	100.0
Total	219	100.0	100.0	

Table 14. IAFQ14. Do you think it is possible to have 'all women squadron' in IAF where all employees are women?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	63	28.8	28.8	28.8
No	73	33.3	33.3	62.1
Can't Say	83	37.9	37.9	100.0
Total	219	100.0	100.0	

Table 15. IAFQ15. Would you like to marry a working spouse or prefer someone who sits at home looking after home affairs?

	Frequency	Percent	Valid Percent	Cumulative Percent
Working	54	24.7	24.7	24.7
Staying Home	3	1.4	1.4	26.0
Not Sure	162	74.0	74.0	100.0
Total	219	100.0	100.0	

There was no significant association observed in rank and response to IAF questionnaire except for IAFQ6, IAFQ7 and IAFQ12 ($p < 0.05$). Even though, number of female respondents were very small (3), Chi-square test was done to estimate if there was any gender-based differences in response to IAFQ. There was no difference in responses to IAFQ between male and female aircrew ($p > 0.05$). Cross tabulation was also done to estimate association of responses to related IAFQs among each other's. Responses to the related IAFQs i.e. IAFQ1, IAFQ2, IAFQ3, IAFQ4, IAFQ8 and IAFQ13 were significantly associated ($p < 0.01$). Similarly, responses to IAFQ5, IAFQ6 and IAFQ7 were also significantly associated ($p < 0.001$).

The mean AWS score among fighter pilots in the pilot study was 58.84 [2]. In the present study, the mean AWS score (63.95) is significantly higher than the pilot study ($p < 0.001$).

DISCUSSION

Until recently, a woman flying a fighter aircraft in the IAF was considered an alien concept. The source of such gender bias mostly lies in attitudes and stereotype that inhibit any society or organization from reaching true gender equality. However, in military context, the source of combat exclusion policy is found in law and tradition. Typically, combat is regarded as men's work, much too arduous and hazardous for women. The physical and mental demands of combat, and the horrors of war and death, are still believed not to be the domain of women [8]. However, much against the perceived belief, the present study has brought out objectively that the Indian Air Force fighter pilots (both male and female) are egalitarian and profeminist. The mean AWS score is significantly higher than the pilot study implying that the fighter pilots participating in the study were more egalitarian and profeminist than the fighter pilots participating in the pilot study [3]. IAF has been pioneer in pushing gender-parity in the Indian Armed Forces. The representation of women officers in the Indian Armed Forces is highest in the IAF and is serving in all the branches of IAF [9]. Even before the fighter flying was opened for women, they were serving in combat roles for assault helicopters in IAF [9]. This could not be possible without an egalitarian and profeminist attitude of IAF leadership. The IAF leadership represents the country which is changing and contrary to general perception, is not conservative in many estimates. The Reykjavik index of leadership is one such objective assessment from a global agency. The Reykjavik Index for Leadership measures how women and men are viewed in terms of their suitability for leadership. India scored 67 against 73 for G7 countries and ranked above Brazil, Russia and China. It has a relatively high Index for Leadership and is broadly in line with those for the lower scoring G7 countries (Italy 68, Germany 69 and Japan 70) [10]. In this index Defense/police sector of India had higher score (68) than overall score for the country (67).

It is interesting to note that even though only 75% of respondent believed that IAF is matured enough as an organization to allow women in fighter flying, more than 90% of them agreed that they were capable of flying military and combat missions and they should be allowed to fly as fighter pilot. It is also important to note that more than 90% of respondent felt that they were comfortable working with opposite gender in squadron/ unit/ cockpit. This implies that gender related Crew Resource Management issues may not be the immediate concern for IAF. Even though, most of the fighter flying is solo (single cockpit) except in twin cockpit fighters, sortie preparation and coordination with squadron for success of any fighter mission is extremely vital. Majority of the respondent (80%) thought that women are NOT a hindrance in functioning of squadron of a flying unit. 44% of the respondent even thought that they can improve the functioning of the squadron, however, equal no (52%) of pilots were not sure about this. Similarly, more than half (55%) of them thought that mixed gender crew (male and female pilots) compliment as crew in the cockpit, though 41% were not sure about this. It appears that the decision to allow women in fighter flying reflects the prevailing attitude of fighter pilots towards women. They had no doubt about their capabilities and they had no negative perception about gender-based adjustment issues resulting in the functioning of the squadron. This could be because of their experience with women officers working in all other branches of IAF. Strength of this belief lies even at personal level as more than 90% agreed that they will allow their daughters/ female acquaintances to join IAF as a fighter pilot. Similarly, conforming to the conservative gender-based role of women in a society, only 1.4% responded that they wanted to marry someone who preferred to stay at home looking after home affairs. The working culture of a fighter squadron demands an independent spouse as the aircrew is usually engaged in squadron activities which is defined by erratic schedule, late working hours and little opportunity for 'traditional way of family time'. This further gets compounded by remote

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

locations of air-bases (away from main cities which may have limited or no job opportunity for a well-qualified spouse) and frequent postings (every two to three years). This may result in strain in the relationship if the spouse is not well oriented to 'the idea of a fighter squadron'. Despite these perceived issues, only 4% accepted that 'affairs at home' were main concern when they worked in the squadron. Probably, majority cope up with this by focusing on the immediate professional task at hand ie flying while in the squadron which is a healthy sign. Interestingly, one-third of the fighter pilot even supported the utopian idea of 'all women squadron' in IAF (only 33% rejected it and remaining respondents were not sure about it).

This is one of the first studies to enquire the prevailing attitude towards women among the aircrew of the IAF. The strength of the study lies in the fact that responses to related IAF Questionnaire were significantly correlated with each other and there were no contradiction in the response. This study strengthens the view that women fighter pilots will be seamlessly integrated into the fighter squadrons without any problem as male fighter squadrons are egalitarian and profeminist. This study may also act as a tool for political and IAF leadership to understand how IAF aircrew views and values women. This study was done to shed light onto IAF's fighter aircrew perceptions of and prejudices towards women in fighter flying. Author believes that we should document and measure our social norms so that we can challenge them, track them over time and hold ourselves, our actions and our leaders to account. Social transformation is challenging, but with this evidence and a larger sense of purpose, IAF can progress to gender- based equality as the institutional norm- where men and women are equally able to fulfill their potential. This study may also be used as a reference for any future study to assess the impact of a historical decision of allowing women in fighter flying in the IAF.

CONCLUSION

The study has strengthened the view that fighter pilots of the IAF are egalitarian and profeminist. Their prevailing attitude towards women in fighter flying will allow seamless integration of women fighter pilots in the fighter squadrons of IAF.

REFERENCES

- [1] Shields PM, Curry L and Nichols J. Women Pilots in Combat: Attitudes of male and female pilots. *Minerva: Quarterly report on women and military*, 8(1); 1990. 21-35.
- [2] <https://www.news18.com/news/auto/eight-women-fighter-pilots-in-indian-air-force-as-on-july-1-govt-2245763.html>. Accessed on 21 May 20.
- [3] Kumar A. Attitude towards Women in Fighter Flying Among Aircrew of IAF: A Pilot Study. *International Journal of Indian Psychology*, Vol. 6(1); 2018. 35-40. DIP: 18.01.065/20180601, DOI: 10.25215/0601.065.
- [4] Spence JT, Helmreich R, Stapp J. A short version of the Attitude toward women Scale (AWS). *Bulletin of the Psychonomic Society*, 2; 1973. 219-220.
- [5] Spence JT, Hahn ED. The attitudes toward women scale and attitude change in college students. *Psychology of women*, 21; 1997. 17- 34.
- [6] <https://www.militaryfactory.com/modern-airpower/aircraft-indian-air-force.asp> accessed on 21 May 20.
- [7] <https://thediplomat.com/2015/04/the-indian-air-forces-big-problem-not-enough-pilots/> accessed on 21 May 20.
- [8] Witherspoon RP. Female soldiers in combat: A policy adrift. *Minerva*, 6; 1988. 1-28.

Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force

- [9] Ajay Kumar. Women in Fighter Cockpit: A Review with IAF Perspective. *International Journal of Indian Psychology*, 7(1); 2019. 393-408. DIP:18.01.044/20190701, DOI: 10.25215/0701.044.
- [10] Harrison M, Koch-Mehrin S, Kristjansdottir HB. The Reykjavik Index for leadership 2019-20. Reykjavik Global Forum, Kantar; 2020. 4-33.

Acknowledgement

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Kumar A. (2021). Attitude Towards Women in Fighter Flying among Fighter Pilots of the Indian Air Force. *International Journal of Indian Psychology*, 9(3), 2088-2096. DIP:18.01.198.20210903, DOI:10.25215/0903.198