
TRAIN WITH ZEE

AN INDEPENDENT REPORT



JUNE 2023



REMIT OF THIS REPORT

This report recognises the agreement established in the contract between Train with Zee and the University of Central Lancashire (Allied Health Research Unit).

This report discusses all the main outcome measures of this study and meets the full contractual obligation between the parties.

AUTHORS

P. STANTON, L. HAWORTH, C. DANES-DAETZ, J. SINCLAIR, A. CHOHAN.

TABLE OF CONTENTS

1.	Introduction	5
	Self-Defence Training for Women	6
	The Psychological Health benefits of self-defence	7
2.	Aim of the Research Study	8
3.	Methods	8
	Participant Recruitment	8
	Data Collection Procedure	9
	The Intervention	9
	Outcome measures (Questionnaires)	10
	Data Analysis and Interpretation	11
4.	Results	11
	Participant Demographics	11
	Participant Experience	12
	Participant feelings	13
	Self-Esteem	14
	Psychological Wellbeing	15
	Participant reported feedback on the course	18
	Suggested improvements	18
	Suggestions for future sessions	18
5.	Discussion	19
	Potential benefits of Self-defence as a social prescribing intervention in Higher education	19
	Challenges or negative outcomes	20
	Potential challenges / barriers to effective delivery	21
	Recommendations for future work	21
6.	Project Summary	22
7.	References	24

**EXPLORING THE POTENTIAL HEALTH AND WELLBEING EFFECTS OF A SIX-WEEK SELF-DEFENCE
EXERCISE COURSE FOR UNIVERSITY STUDENTS**

1. INTRODUCTION

The United Nations has defined gender-based violence against women as "any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivations of liberty, whether occurring in public or private life" (2). In England and Wales, an estimated 3% (686,000) of women have experienced sexual assault and 7% (1.6 million) have experienced domestic abuse (3, 4). According to a British crime survey (5), young women aged 16-24, are at an increased risk of interpersonal violence (especially sexual assault) compared to males and older individuals. With the majority of university students falling within this age range, female university students are commonly identified as a population at higher risk of sexual violence or victimisation (6). Evidence indicates that university campuses are highly prevalent sites for violence against women (7), with 25% of female students experiencing sexual harassment (8).

Over the last year (2022-2023), in England and Wales, a greater percentage of full-time students experienced sexual assault compared to individuals from any other occupation category (3). Students have previously reported a wide range of behaviours that include inappropriate comments, non-consensual sexual touching, stalking, sexual coercion, assault, and rape (9). According to a systematic review of research on gender-based violence among UK university students and staff, sexual harassment was the most prevalent type of violence reported, followed by sexual assault and domestic abuse (10). The study found that nearly one in five (19%) students who experienced domestic violence and physical abuse said the abuser was a romantic or intimate partner, and between 7 and 18% of all students who experienced sexual abuse said the abuser was a romantic or intimate partner, emphasising the high rates of intimate partner violence within this population (10). Preventive efforts against sexual harassment in higher education consist foremost of policy, education and training, case management and support structures (8). However, there is a lack of substantial evidence to support the claimed effects of major preventive measures (8). Specifically in the UK, a limited number of studies have begun to address this type of violence for effective prevention (7, 10). Considering the conflicting results regarding programs aimed at men and the

persistent high rates of sexual assault, especially in higher education, interventions that focus on women's resistance are crucial components in the overall framework of sexual assault prevention (11). One of the many strategies to tackle this situation is to implement gender-specific self-defence training programmes for women (11). These strategies have the potential to be embedded as a component of student support services at an institution or students could sign posted to suitable social prescribing services within the local community, offering self-defence training for a multitude of holistic wellbeing purposes.

SELF-DEFENCE TRAINING FOR WOMEN

Women that take part in self-defence courses often perceive that they experience physical health benefits (6), less incidence of sexual assault (8, 15) and an increase in confidence to effectively resist assault compared to those who have not undertaken such training (12-14). Previous studies have found that the harm and negative health effects that female university students experienced as a consequence of sexual assault on campus could be reduced by implementing a rigorously designed and executed sexual assault resistance program (13, 14). Notably, a reported relative risk reduction of 46.3% (95% CI 6.8 to 69.1; $p=0.02$) was found in the self-defence group in comparison to a control group among first-year university women (13). Positive outcomes have been also found in reducing domestic violence and intimate partner violence among females from different backgrounds, including refugees and individuals with disabilities (15, 16). Research suggests that female participants have previously perceived themselves as having significantly greater physical competency ($p<0.001$), and strength ($p<0.001$) after participating in a self-defence class (17).

Women's self-defence training is designed to teach women different physical and verbal skills to prevent and resist assault, empowering them without limiting their freedom (12). Self-defence courses, unlike other strategies for preventing violence against women, assume positive empowerment in that women are able to protect themselves, rather than depend on others for protection (17), using physical defence techniques, with some derived from martial arts (18). Whilst traditional martial arts programmes have demonstrated health benefits in adult populations, such as improvement in balance and cognitive function (19), they are not

recommended as isolated programmes for female self-defence, owing to the high level of athletic performance needed and years taken to master (20). A systematic review has described the different modalities of self-defence training including in existing research, including delivery principles, training length and target audiences (21). Many courses are offered to students over the course of a semester (10 - 14 weeks) (21), whilst others are structured self-defence programmes such as The Rape Aggression Defence System, IMPACT violence prevention , and Model Mugging training (21).

The same review suggested that the sex of the participants and instructor may have a significant impact on training outcomes (21). Researchers have strongly supported female-only group self-defence classes in higher education, because students have felt more confident and less embarrassed in a female-exclusive environments (11, 22). Additionally, classes taught solely by a male instructor have yielded less positive results in participants' perceived 'right to resist a potential assault' than the classes taught in combination by male and female instructors (23).

THE PSYCHOLOGICAL HEALTH BENEFITS OF SELF-DEFENCE

Participation in a self-defence not only elicits the physical benefits of preventing violence towards women, but the effects on psychological health and wellbeing is also of paramount importance (12, 21). Evidence suggests that there are numerous psychological benefits of self-defence courses, such as increases in assertiveness, self-esteem, anxiety, perceived control, and self-efficacy in women (17, 21, 24, 25). Previous research has included university female students who took part in a 10-week self-defence course comprising 3 hours of physical and verbal defence skills plus 1.5-hour discussion section per week. Participants completed pre- and post-self-defence class surveys, including not only questions related to history, fear, and beliefs about violence, but also physical activities, body perceptions, and beliefs about women and gender (17). The surveys included qualitative and quantitative components, and a combination of bespoke measures and pre-existing scales, including the Sexual Experiences Survey (33), a modified version of the Self-Defence Self-Efficacy Scale (25), the Rape Myths Acceptance Scale (34), the Physical Self-Efficacy Scale (35), and the shortform of the Liberal Feminism Ideology Scale (36). The author suggested the self-defence class had life-changing effects on the

participants, increasing their confidence in potentially risky situations ($p<0.001$), increasing their positive self-perception of their own bodies ($p<0.001$), and increasing their self-confidence ($p<0.001$), and self-efficacy ($p<0.001$) (17). Despite this, psychological benefits are not confirmed in all studies (25, 26), therefore highlighting the need for new and robust investigations on this topic. Whilst the contradictory findings (17, 25, 26) could be related to the measurement tools used in each study, it is perhaps more likely due to the variability of the design of the self-defence training programme (training length, type of self-defence taught, follow-up, etc.) (21).

Despite self-defence classes being one of several possible approaches for preventing violence against women, the implementation of self-defence courses may help to empower women and combat health barriers through physical activity and education in higher education (11).

2. AIM OF THE RESEARCH STUDY

The aim of this research study was to explore the health and wellbeing effects of a 6-week self-defence social prescribing course for female university students who had experienced sexual harassment or violence. This case series report compared the pre- and post- intervention health & wellbeing related outcome measures amongst a number of participants to assess the potential effectiveness of the self-defence programme.

3. METHODS

This study conforms to the General Data Protection Regulation (GDPR) and the Declaration of Helsinki (27). Ethical approval was granted by the University's Health Ethics Committee (HEALTH0239). All research data gathered was anonymised using codes at the point of data collection, only the data sets where pre- and post-intervention data could be matched were processed for analysis.

PARTICIPANT RECRUITMENT

Participants in the study were female university students. The six-week course was

offered to females identified by the university's student wellbeing services, who had accessed support following experience of harassment and/or other forms of abuse or violence. When participants signed up to the self-defence course, they were made aware of the optional research study taking place alongside it. Participation in the research study was voluntary, and interested volunteers were required to meet the eligibility criteria:

- **Inclusion criteria:** Female, over 18 years of age, part of the university student population, and enrolled onto the six-week self-defence course.
- **Exclusion criteria:** Under 18 years of age, male, or not part of the university student population, or not enrolled onto the six-week self-defence course.

DATA COLLECTION PROCEDURE

The data collection procedure is summarized in Figure 1. Participants completed pre- and post-intervention questionnaires online using Microsoft Forms (Microsoft Forms, USA).

THE INTERVENTION

As per published recommendations (11, 21-23), this female-only intervention was delivered in small group settings led by female instructor, Zaynab Jogi from "Train with Zee". It was a six-week course of instructor-led exercise sessions and educational content. The sessions included cardiovascular fitness work, the teachings of self-defence techniques, including aspects of Krav-Maga, kickboxing, and other martial arts, and self-defence related fitness work. Participants were encouraged to attend one 60-minute session per week.

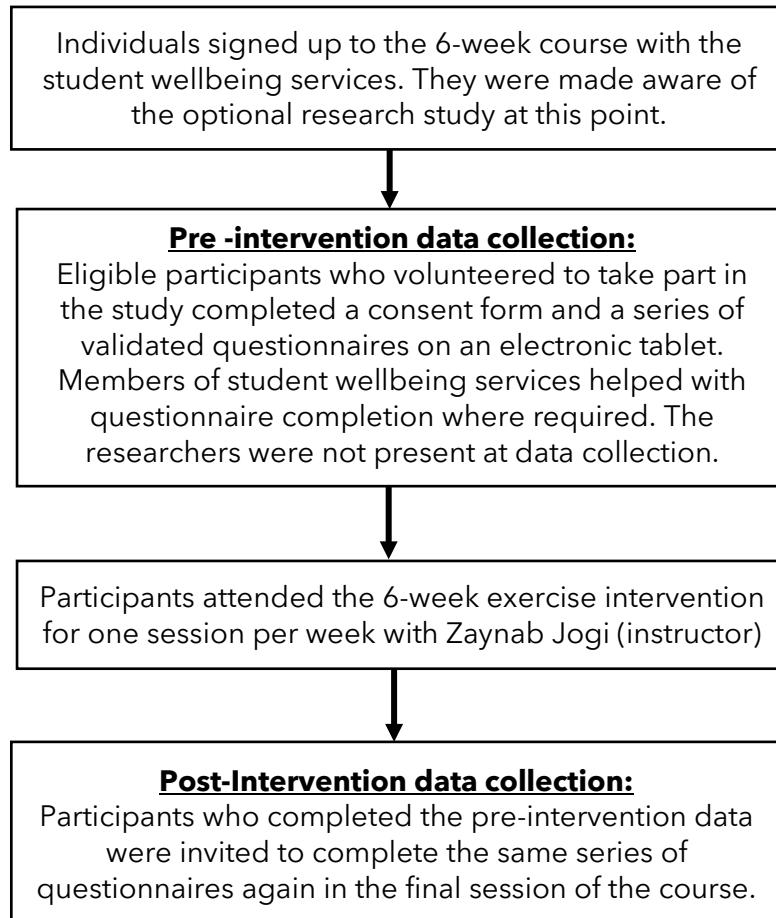


Figure 1. Study diagram

OUTCOME MEASURES (QUESTIONNAIRES)

Participant demographics were collected at the pre-intervention stage to understand the background characteristics of each participant. This included single select multiple choice questions for age, religion and ethnicity.

Participant experience was recorded at the pre- and post-intervention stage to understand the forms of harassment or abuse participants have experienced and to assess 'baseline' feelings of anxiety, safety, and awareness and social connections.

Self-esteem was assessed pre- and post-intervention using the Rosenberg Self-Esteem Scale (28). Participants were asked 10 questions to achieve an overall self-esteem score. Each question was answered on a 4-point Likert scale ('0' strongly disagree - '3' strongly agree). Scores from the 10 questions were collated and added up to provide a score of between 0 and 30 points, with a higher score indicating higher self-esteem. Scores between 15 and 25 are considered within the

'normal' range.

Psychological wellbeing was assessed pre- and post-intervention using Ryff's Psychological Wellbeing Scale (30). Participants were asked 18 questions, which measured 6 different components of eudaimonic psychological wellbeing: 3 questions per component. Eudaimonic wellbeing refers to actualisation or self-realisation of a person's best potentials. Answers were selected from a 6-point Likert scale ('1' strongly disagree - '6' strongly agree). For each subscale, the sum of the 3 questions were presented and analysed. The possible score ranges from 3 to 18 per subscale, with higher scores indicating better psychological wellbeing. The six components (subscales) assess: (1) autonomy, (2) environmental mastery, (3) personal growth, (4) positive relations with others, (5) purpose in life, and (6) self-acceptance.

DATA ANALYSIS AND INTERPRETATION

Where possible, validated questionnaires were used, and scored using the standard instructions provided (28, 30-32). All questionnaire data was ordered and processed in Microsoft Office Excel 365 (Microsoft Corp. USA). Subsequently, the data was analysed using the Statistical Package for Social Sciences version 28.0 (SPSS); paired sampled t-tests were performed to distinguish any differences in the scores recorded at pre-intervention and post intervention (before and after the 6-week course). Additionally, effect sizes (partial eta²) were calculated to determine the effect the intervention on the variables measured.

4. RESULTS

Eleven female volunteers were initially recruited to the study at the pre-intervention stage with baseline questionnaire data successfully collected for all participants. Following completion of the 6-week course, six participants (55%) completed the post-intervention data; five participants stopped attending classes prior to the final data collection session, indicating a dropout rate of 45%.

PARTICIPANT DEMOGRAPHICS

Participant demographics of the six included participants are presented in Table 1.

All participants were between the ages of 18 and 34, 66.4% (n=4) were of Asian/Asian British ethnicity and 88.3% (n=5) explicitly stated that they had experienced harassment, abuse or intimidating behaviour.

Table 1: Participant demographics

Demographic	Category	Frequency (n=)
Age (years)	18-24	4
	25-34	2
Religion / Beliefs	No religion	2
	Christian	1
	Muslim	2
	Prefer not to say	1
Ethnicity	Asian/Asian British	4
	Mixed or Multiple ethnic groups	1
	White (British, Irish, Gypsy or Irish traveller)	1
Experienced harassment, abuse, or intimidating behaviour	Yes	5
	No	0
	Prefer not to say	1

PARTICIPANT EXPERIENCE

The time since participants experienced abuse is displayed in Figure 1. All participants (n=6) had experienced abuse in the past year, with one participant stating that the abuse had occurred more recently within the academic year.

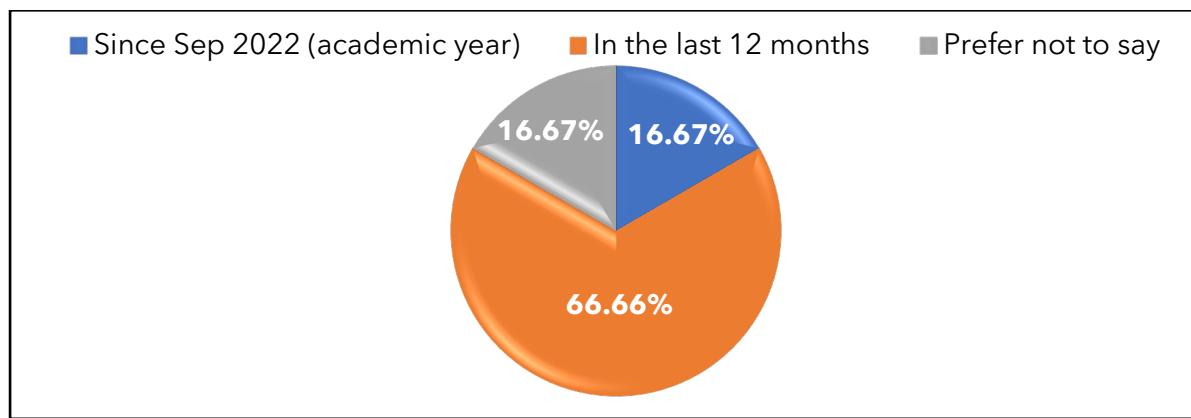


Figure 1: Time since the abuse occurred.

When asked to describe the type of abuse they had experienced, participants were able to tick as many boxes as applicable. Four out of six (67%) of participants reported that they experienced more than one form of abuse. Harassment was the

most common form of abuse experienced (18%, n=4), with physical assault, coercive or controlling behaviour and safety concerns being the second most common forms reported (14%, n=3; Figure 2).

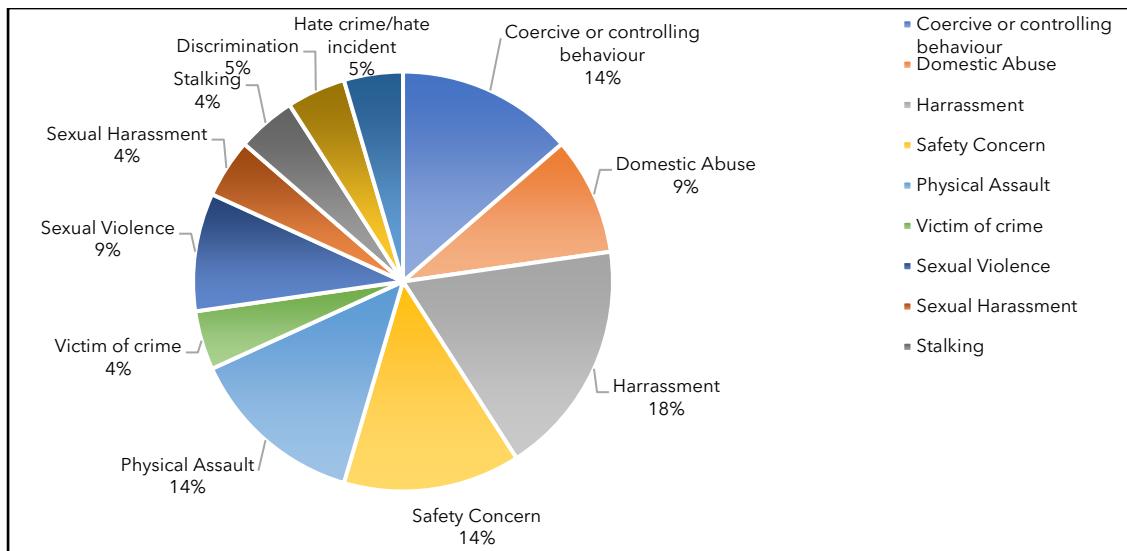


Figure 2: Reported forms of abuse experienced by the participants.

PARTICIPANT FEELINGS

The responses to the questions regarding feelings of safety, and awareness and social connections are presented in Figure 3 and individual responses to each scale are listed in Table 4. 'Feeling safe to go out after dark' scored the lowest at the pre-intervention stage (1.3 out of 5), and had the largest improvement post-intervention, increasing by 1.7 points to 3.0, indicating a greater feeling of safety. Other positive effects were also found, including small improvements in feeling of anxiety, physical and mental wellbeing. Although, the likeliness of participants accessing support services did not change, they were more aware of support services available following the intervention.

Five participants reported improvements in feelings of anxiety. Three participants reported a reduction in feelings of loneliness, whilst one participant reported a 4-point increase in loneliness. Three participants felt safer going out during the day and five participants felt safer going out after dark post-intervention. Two participants felt their ability to engage in their studies had increased following the intervention, and 1 participant felt their friendships had improved. In terms of

wellbeing, three participants reported an improvement in both mental and physical wellbeing. Two participants felt their awareness of support services had increased in response to the intervention, yet only 1 reported an increase in likeliness to access these services, whilst others remained neutral. No negative effects for any of the variables assessed were reported post-intervention aside from a single participant reporting increased feelings of loneliness.

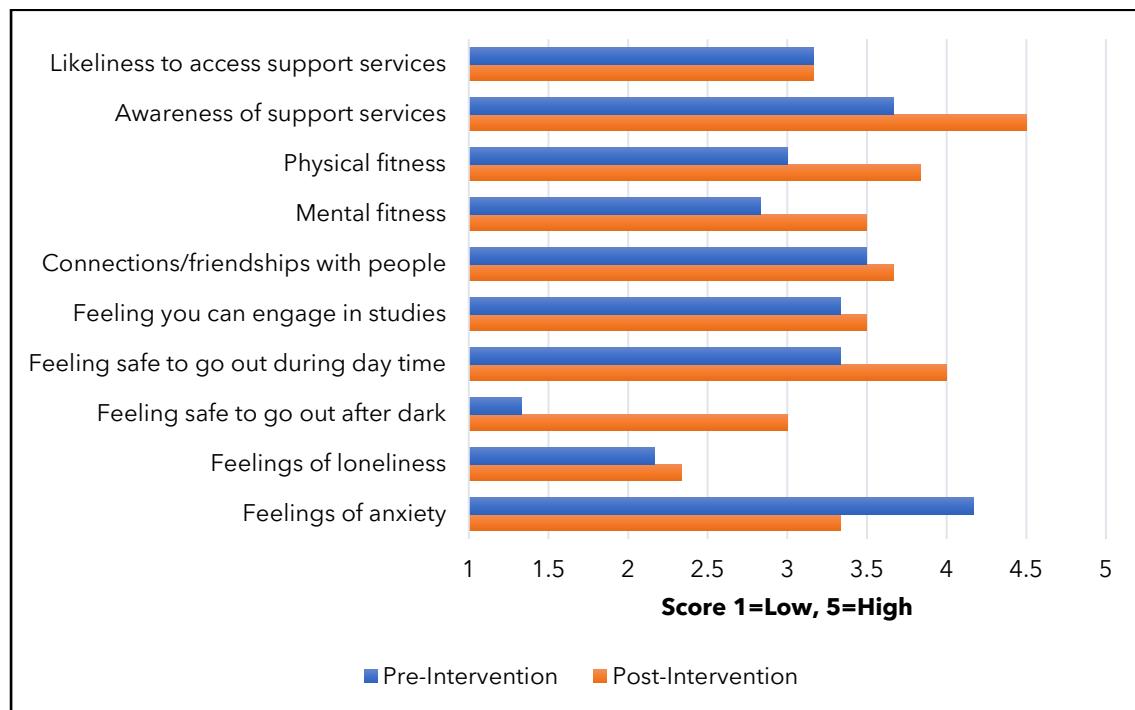


Figure 3: Mean scores for participant's feelings pre- and post-intervention.

SELF-ESTEEM

Although the mean scores for the Rosenberg Self-Esteem Scale (Table 2) remained the same after the 6-week intervention, the scores at baseline were within 'normal' range, and therefore there may have been reduced likelihood of improvement compared with individuals who scored outside of 'normal' range at baseline. Further exploration of this data (table 4) however, shows a positive increase in self-esteem for 4 of 6 participants.

Table 2: Mean (SD) Rosenberg Self-Esteem Scale scores pre and post intervention.

Rosenberg Self-Esteem Scale		
Time point	Pre-intervention	Post-intervention
Score (/30)	18.5 (6.2)	18.5 (6.4)
Sig (P)		1.00
Eta ²		0.00

Higher scores indicate higher self-esteem. Scores between 15-25 are considered to be within 'normal' range.

PSYCHOLOGICAL WELLBEING

Table 3: Table 3: Mean (SD) Ryff's Psychological Wellbeing Scale (18-item) scores pre and post intervention. *significant improvement (p<0.05)

Subscale	Time point	Mean Score	Sig (p)	Eta ²
Autonomy (/18)	Pre	13.3 (3.2)	0.038*	0.61
	Post	16 (1.3)		
Environmental Mastery (/18)	Pre	13.5 (5.5)	0.300	0.21
	Post	14.7 (4.8)		
Growth (/18)	Pre	17.3 (4.2)	0.700	0.03
	Post	16.83 (3.7)		
Positive Relations with Others (/18)	Pre	12.5 (3.6)	0.270	0.23
	Post	14.3 (4.2)		
Purpose in Life (/18)	Pre	13.5 (5.6)	0.720	0.03
	Post	14 (6.9)		
Self-Acceptance (/18)	Pre	15.83 (4.8)	0.110	0.43
	Post	14 (6.6)		
Overall Score (/108)	Pre	86 (21.3)	0.410	0.14
	Post	89.83 (25.8)		

Higher scores indicate better psychological wellbeing.

Table 3 displays the scores for Ryff's Psychological Wellbeing Scale at pre- and post-intervention stages. A significant difference ($p<0.05$) was reported for the Autonomy subscale, indicating improvement in response to the 6-week intervention. Furthermore, the effect size (η^2), showed that the intervention had a

large effect on these values providing additional confidence that the autonomy was significantly improved through the intervention. Further breakdown of these results highlights 5 of 6 participants noted an increase in autonomy, whilst three participants improved in environmental mastery and positive relations, highlighting their increased ability to manage everyday situations to benefit personal needs, and social connection.

Table 4: All individual scores for each variable and pre- and post-intervention data collection phases with reference values⁴

	Participant 1			Participant 2			Participant 3			Participant 4			Participant 5			Participant 6		
	Pre	Post	Diff															
Psychological Wellbeing: Ryff's Psychological Wellbeing (Each subscale out of 18)																		
Autonomy ^{(^)14.28}	10	15	+5	15	16	+1	10	15	+5	12	15	+3	15	18	+3	18	17	-1
Environmental mastery ^{(^)14.58}	12	12	0	15	14	-1	9	9	0	20	21	+1	19	20	+1	6	12	+6
Growth ^{(^)13.0}	16	14	-2	21	16	-5	12	12	0	21	21	0	21	21	0	13	17	+4
Positive relations ^{(^)14.16}	9	11	+2	18	15	-3	9	9	0	13	21	+8	15	16	+1	11	14	+3
Purpose in life ^{(^)11.58}	14	12	-2	12	11	-1	4	3	-1	14	21	+7	21	21	0	16	16	0
Self-acceptance ^{(^)13.86}	16	11	-5	16	14	-2	7	3	-4	21	21	0	19	20	+1	16	15	-1
Self-esteem: Rosenberg Self-Esteem Scale (out of 30)																		
(^)15-25	18	20	+2	19	12	-7	9	13	+4	28	30	+2	21	18	-3	16	18	+2
Feelings (1- 5)																		
Feelings of anxiety	5	2	-3	2	3	+1	5	5	0	5	4	-1	4	3	-1	4	3	-1
Feelings of loneliness	3	2	-1	2	1	-1	1	5	+4	1	1	0	3	3	0	3	2	-1
Feeling safe to go out after dark	3	5	+2	1	2	+1	1	1	0	1	3	+2	1	4	+3	1	3	+2
Feeling safe to go out during daytime	3	5	+2	4	4	0	1	1	0	5	5	0	4	5	+1	3	4	+1
Feeling you can engage in studies	3	4	+1	4	3	-1	1	1	0	5	5	0	5	5	0	2	3	+1
Connections/friendships with people	3	5	+2	4	4	0	1	1	0	5	5	0	4	4	0	4	3	-1
Mental wellbeing	2	4	+2	4	4	0	1	1	0	4	5	+1	4	4	0	2	3	+1
Physical wellbeing	4	5	+1	4	3	-1	1	1	0	4	5	+1	1	5	+4	4	4	0
Awareness of support services	5	5	0	4	4	0	1	5	+4	5	5	0	3	4	+1	4	4	0
Likeliness to access support services	5	5	0	5	3	-2	1	5	+4	3	1	-2	2	2	0	3	3	0

PARTICIPANT REPORTED FEEDBACK ON THE COURSE

Key themes that emerged when participants were asked to report on the impact of the course on them included confidence, social connections/friendships, psychological benefits, improved self-esteem and awareness/vigilance and solidarity. Five of the six participants reported either increasing confidence, or self-esteem growth, highlighting different stages on a journey to achieving confidence with some referring to their notable growth and change and others acknowledging feeling more secure and safe. Three of the six participants reported an improvement in social connections and friendships with one highlighting the importance of solidarity and not feeling along on the journey and "realising other people also feel afraid and want to feel confident". Overall, it appears that social connection and growth/change in confidence or self-esteem were the most highlighted impacts of the course.

SUGGESTED IMPROVEMENTS

Three of six participants suggested the course did not require further improvements. However, suggestions made by the remaining participants included either a longer course or more dedicated practice time to help remember techniques, whilst others suggested the need to focus on "healing" and "building confidence for survivors".

SUGGESTIONS FOR FUTURE SESSIONS

Three of six participants suggested future exercise focussed social prescribing courses would be beneficial or of interest, with suggestions including fitness/sports activities, boxercise, self-defence. Other suggestions made focussed on psychological wellbeing included mind body practice courses or healing groups.

5. DISCUSSION

This project aimed to assess the health and wellbeing effects of a 6-week self-defence social prescribing intervention for female university students with experience of harassment or violence. A total of six participants completed the research study and both components of data collection. Owing to the existing body of literature which highlights the prevalent rate of abuse against female students (3,7,8), twenty-two reports of different forms of abuse reported amongst only six participants should be but isn't surprising. Given that all but one of these reports of abuse were within the last 12 months further justifies the immediate need for implementation of interventions such as "Train with Zee's" Self-Defence courses, and research studies of this type. Whilst based on a small number of participants, results from this study show promise, challenges relating to drop out rates and potential barriers to more effective delivery may need to be considered.

POTENTIAL BENEFITS OF SELF-DEFENCE AS A SOCIAL PRESCRIBING INTERVENTION IN HIGHER EDUCATION

A previous review on the benefits of self-defence interventions showed that there were multiple physical and psychological benefits to women (21, 24). In line with these results from this study suggest that there are several potential benefits of implementing self-defence classes as a social prescribing tool in a higher education setting. Benefits of this intervention included an increased or high awareness of support available alongside improvements in physical and mental wellbeing, reduced anxiety levels and social benefits such as feeling safe to go out during the day or night and reduced loneliness for half of the participants. Though awareness was strong by the end of the intervention, likeliness of accessing support services remained varied. Further work should further explore potential barriers to accessing support and social prescription activities to widen participation.

Perhaps the most notable improvement seen in 5 of the 6 participants (83%) was a significant improvement in the psychological wellbeing component "autonomy" (30). As a psychological construct, autonomy is a measure of an individual's

eudemonic wellbeing, i.e., their realisation or self-actualisation of their full potential. With all participants either showing an increase ($n=5$) or maintenance ($n=1$) of autonomy, this outcome measure highlights a key benefit of the intervention being empowerment and increased independence of the participants. A positive increase in self-esteem, within the reference range or moving towards the reference range, was noted post intervention for 5 of 6 participants. These results, alongside the reported psychological benefits noted further support the notion that self-defence classes have multiple psychosocial benefits to female participants (17, 21, 24, 25). Other psychological benefits noted within the present study included three of six participants reporting improvements in environmental mastery and positive relations. This suggests not only improved positive social connection but also improved abilities to effectively control and make use of surrounding opportunities. These key factors suggest the benefits of such social prescription interventions may be to socially connect with others with shared lived experience to improve one's confidence and ability to navigate recovery and growth following trauma related to abuse or harassment.

Overall, considering all 17 outcome measures for each participant within the study, all participants reported at least three improvements with 4/6 (67%) showing 9 or more benefits or improvements in the reported outcome measures across psychological wellbeing and reported feelings.

CHALLENGES OR NEGATIVE OUTCOMES

Negative changes in outcome measures varied between participants with an average of 1 outcome measures changing per person. Results varied across participants however with one participant reporting a maximum of 3 negative changes and two reporting no negative changes. Over all participants 6 negative changes were seen amongst three variables (Environmental mastery, Purpose in life and self-acceptance) within Ryff's Psychological Wellbeing tool (30), with a single participant reporting increased feelings of loneliness. Whilst a reduction in self-esteem was seen in a single participant within the study to outside reference ranges

it is important to note other factors that may have influenced this outside of the intervention as this participant also reported the most negative changes.

POTENTIAL CHALLENGES / BARRIERS TO EFFECTIVE DELIVERY

The main limitation of the study was the retainment rate of 55%. Retainment, or dropout rate is often used as a measure of acceptability and feasibility (37) of interventions, particularly within health and medical research to determine whether it is possible to do something specific, such as implement a self-defence intervention amongst female university students and gather pre/post intervention data via anonymous online questionnaires. Aspects of feasibility that are often questioned relate to the ability to recruit and retain participants throughout the course of the intervention (37). A dropout rate of 45% is relatively high, and it may be beneficial to determine whilst five participants dropped out from the research study, how many of them continued to attend the self-defence course?

Determining this may help to inform whether it is the data collection methods, or components of the intervention that could benefit from being more accessible.

The third, and final challenge that arose throughout this study was consideration of how an intervention of this type could be implemented to attract and serve its intended audience. Whilst the need for self-defence classes for female university students is justified, the practicalities of implementing these may not be so straight forward. Whether the course is offered and integrated as part of internal student support services within the university whether the university sign posts individuals to an external service requires consideration, as does the balance of practice and healing within such programmes.

RECOMMENDATIONS FOR FUTURE WORK

The body of evidence for self-defence interventions is justifiably increasing, and the potential effectiveness of such interventions as coping and preventative mechanisms for violence against women is well-documented. Future self-defence

interventions may also have the potential to be implemented as a social prescribing tool for wellness and health. To support this, additional research would be beneficial. Involvement of participant groups within research design may help to determine solutions and effective methods of retaining participants in both the research studies and programmes. Working with representative groups may help to determine what the potential barriers and facilitators would be informative and could help direct future implementation strategies for wider uptake of self-defence as social prescribing tool.

It may also be worthwhile to conduct a longitudinal study with multiple follow up periods after completion of the self-defence course to assess and monitor participants' perceptions and experiences of abuse, their ability to cope in any subsequent abusive situations, and how their behaviours changed in comparison to before the self-defence course. However, in line with suggestions made by participants it may be beneficial to lengthen the practice of techniques and adopt a trauma informed approach to future courses to help encompass both the physical and psychological growth or wellbeing needs of individuals.

6. PROJECT SUMMARY

This university based six-week self-defence social prescribing intervention highlighted:

- ! Due to the high rates of attrition (45%), participants should be included in future research study co-design to highlight and overcome potential barriers to intervention and research participation.
- ! **Harassment** was the most common form of abuse experienced with **physical assault, coercive or controlling behaviour** and **safety concerns** being the second most common forms reported.
- ! Participants highlighted the need to increase the length of sessions and highlighted the importance of "**healing**", suggesting a **trauma-informed** approach to sessions may be beneficial.
- ✓ Five of the six participants reported abuse within the past 12 months, highlighting the need for continued interventions.

- ✓ Key **psychological wellbeing benefits** included a significant improvement in **autonomy (increased independence)** and positive changes in **environmental mastery** and **positive relations** highlighting increased ability to manage everyday situations to benefit personal needs, and social connection.
- ✓ **Participant reported benefits:** social connection and solidarity, growth/change in confidence or self-esteem were the most highlighted impacts of the course.
- ✓ Overall, there is **further appetite for future physical activity interventions** to benefit targeted groups with shared lived experience of harassment or violence.

7. REFERENCES

1. Mannell J, Lowe H, Brown L, Mukerji R, Devakumar D, Gram L, et al. Risk factors for violence against women in high-prevalence settings: a mixed-methods systematic review and meta-synthesis. *BMJ Global Health*. 2022;7(3): e007704.
2. Assembly UNG. Declaration on the Elimination of Violence against Women. UN General Assembly. 1993.
3. Office for National Statistics (ONS). Sexual offences victim characteristics, England and Wales: year ending March 2022 2023 [Available from: <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/sexualoffencesvictimcharacteristicsenglandandwales/yearendingmarch2022>].
4. Office for National Statistics (ONS). Sexual offences victim characteristics, England and Wales: year ending March 2020-2021 [Available from: <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/articles/sexualoffencesvictimcharacteristicsenglandandwales/march2020>].
5. Walby S, Allen J. Domestic violence, sexual assault and stalking: Findings from the British Crime Survey: Home Office; 2004.
6. Phipps A, Smith G. Violence against women students in the UK: time to take action. *Gender and Education*. 2012;24(4):357-73.
7. Anitha S, Lewis R. Gender based violence in university communities: Policy, prevention and educational initiatives2018.
8. Bondestam F, Lundqvist M. Sexual harassment in higher education - a systematic review. *European Journal of Higher Education*. 2020;10(4):397-419.
9. Lewis J. Sexual Harassment and Violence in Further and Higher Education. House of Commons Library Accessed August. 2022;17(2022):21-31.
10. Jones C, Smith O, Skinner T, Gangoli G, Rachel F. Overview and Analysis of Research Studies on Gender-based Violence Among UK University Students and Staff. 2020.

11. Gidycz CA, Dardis CM. Feminist self-defense and resistance training for college students: a critical review and recommendations for the future. *Trauma Violence Abuse*. 2014;15(4):322-33.
12. Hollander JA. Does self-defense training prevent sexual violence against women? *Violence Against Women*. 2014;20(3):252-69.
13. Senn CY, Eliasziw M, Barata PC, Thurston WE, Newby-Clark IR, Radtke HL, et al. Efficacy of a sexual assault resistance program for university women. *New England Journal of Medicine*. 2015;372(24):2326-35.
14. Senn CY, Eliasziw M, Hobden KL, Newby-Clark IR, Barata PC, Radtke HL, et al. Secondary and 2-Year Outcomes of a Sexual Assault Resistance Program for University Women. *Psychology of Women Quarterly*. 2017;41(2):147-62.
15. Jordan J, Mossman E. "Get Out of My Home and Don't Come Back!" Empowering Women Through Self-Defense. *Violence Against Women*. 2018;25(3):313-36.
16. Ballan MS, Freyer MB. Self-Defense Among Women With Disabilities: An Unexplored Domain in Domestic Violence Cases. *Violence Against Women*. 2012;18(9):1083-107.
17. Hollander JA. "I Can Take Care of Myself": The Impact of Self-Defense Training on Women's Lives. *Violence Against Women*. 2004;10(3):205-35.
18. Thompson ME. Empowering self-defense training. *Violence Against Women*. 2014;20(3):351-9.
19. Origua Rios S, Marks J, Estevan I, Barnett LM. Health benefits of hard martial arts in adults: a systematic review. *Journal of Sports Science*. 2018;36(14):1614-22.
20. Madden ME, Sokol TJ. Teaching Women Self-Defense: Pedagogical Issues. *Feminist Teacher*. 1997;11(2):133-51.
21. Brecklin LR. Evaluation outcomes of self-defense training for women: A review. *Aggression and Violent Behavior*. 2008;13(1):60-76.
22. Fraser K-L, Russell GM. The Role of the Group in Acquiring Self-Defense Skills. *Small Group Research*. 2000;31:397 - 423.

23. Kidder LH, Boell JL, Moyer MM. Rights Consciousness and Victimization Prevention: Personal Defense and Assertiveness Training. *Journal of Social Issues*. 1983;39(2):153-68.
24. Brecklin LR, Ullman SE. Self-defense or assertiveness training and women's responses to sexual attacks. *Journal of Interpersonal Violence*. 2005;20(6):738-62.
25. Weitlauf JC, Smith RE, Cervone D. Generalization effects of coping-skills training: influence of self-defense training on women's efficacy beliefs, assertiveness, and aggression. *Journal of Applied Psychology*. 2000;85(4):625-33.
26. Weitlauf JC, Cervone D, Smith RE, Wright PM. Assessing Generalization in Perceived Self-Efficacy: Multidomain and Global Assessments of the Effects of Self-Defense Training for Women. *Personality and Social Psychology Bulletin*. 2001;27(12):1683-91.
27. World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects. *Journal of the American Medical Association (JAMA)*. 2013;310(20):2191-4.
28. Rosenberg M. Rosenberg self-esteem scale (RSE). Acceptance and commitment therapy Measures package. 1965;61(52):18.
29. Iwon K, Skibinska J, Jasielska D, Kalwarczyk S. Elevating Subjective Well-Being Through Physical Exercises: An Intervention Study. *Frontiers in Psychology*. 2021;12.
30. Ryff CD, Keyes CL. The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*. 1995;69(4):719-27.
31. Van Weel C. Functional status in primary care: COOP/WONCA charts. *Disability and Rehabilitation*. 1993;15(2):96-101.
32. Schwarzer R, Jerusalem M. Generalized self-efficacy scale. J Weinman, S Wright, & M Johnston, *Measures in health psychology: A user's portfolio* Causal and control beliefs. 1995; 35:37.
33. Koss, M. P., Gidycz, C. A., & Wisniewski, N. (1987). The scope of rape:

Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. *Journal of Consulting and Clinical Psychology*, 55, 162-170

34. Payne, D. L., Lonsway, K. A., & Fitzgerald, F. L. (1999). Rape myth acceptance: Exploration of its structure and its measurement using the Illinois Rape Myth Acceptance Scale. *Journal of Research in Personality*, 33, 27-68.
35. Ryckman, R. M., Robbins, M. A., Thornton, B., & Cantrell, P. (1982). Development and validation of a physical self-efficacy scale. *Journal of Personality and Social Psychology*, 42, 891-900.
36. Morgan, B. L. (1996). Putting the feminism into feminism scales: Introduction of a Liberal Feminist Attitude and Ideology Scale (LFAIS). *Sex Roles*, 34, 359-390.
37. Gadke, D. L., Kratochwill, T. R., Gettinger, M. (2021) Incorporating feasibility protocols in intervention research, *Journal of School Psychology*, Volume 84, Pages 1-18, ISSN 0022-4405.