

Are you tough enough?

An exploratory study to assess the impact of a resilience-based intervention on mental toughness and resilience.

Abstract

Resilience represents the ability to “bounce back” from challenges and is important in sustaining mental wellbeing. Mental toughness, which determines how people respond to challenges despite particular circumstances, can also impact on mental health and wellbeing. Whilst the literature around resilience recognises that elements of mental toughness are essential to building resilience, mental toughness as an independent concept is not acknowledged in the literature as a fundamental building block for resilience. This study therefore aims to explore the relationship between these two concepts to determine whether or not mental toughness is a fundamental element of resilience. In order to achieve these aims, young people were asked to complete the mental toughness questionnaire (MTQ48) and the Resilience Scale for Adolescents (READ) before and after participating in a resilience-based Judo Education programme. It was hypothesised that there would be a significant improvement in resilience and mental toughness scores following the Judo intervention. The study found that mental toughness was strongly linked to resilience in this sample. However, the data did not support the hypotheses related to the intervention, with no significance in the change in scores of either resilience or mental toughness following Judo Education. The fact that this was a small scale study with a limited sample could be partly attributed to this. There was however some limited evidence of positive change for some individuals. Whilst the effectiveness of Judo Education at improving resilience and mental toughness was not fully supported, the study did point towards some potential implications, such as the mediating effects of blanket interventions on gender norms.

Background

Resilience is an essential tool in everyday life and is thought to be built as a result of engaging in sporting, employment and educational activities (Clough, Strycharczyk, 2012). It can be described as “the capacity to withstand or recover from significant challenges that threaten stability, viability, or development” (Masten, 2011). Building resilience is therefore an important way in which to strengthen coping mechanisms during difficult situations, which in turn can help to prevent the onset of poor mental health. Similarly, mental toughness has been highlighted as an important attribute in sustaining good mental health and wellbeing. Mental toughness is identified as “the quality which determines how individuals respond to stress, pressure and to challenge...irrespective of prevailing circumstances” (AQR Ltd).

The literature around resilience identifies that some of the core components of mental toughness are key to developing resilience. These are: challenge; control;

confidence; and commitment. However, mental toughness, as a concept in its own right, is not referred to in the literature as being an element of resilience. An initial literature review carried out as part of this study, which focused on the link between resilience and mental toughness, confirmed this.

This study therefore sought to address this gap in the literature by exploring the relationship between mental toughness and resilience in young people. This was achieved by measuring resilience and mental toughness before and after an intervention in order to assess the relationship at time one (baseline) and to examine whether the two concepts changed in alignment with one another in response to an intervention thought to promote resilience in young people. Whilst this was the primary concern of the research, a logical secondary aim of the research was to evaluate the impact of the chosen intervention on resilience and mental toughness in young people. A further aim of the study was to improve the awareness of mental toughness and mental health in a systemic manner to promote early intervention and prevention, ultimately reducing the prevalence of mental illness and low wellbeing in childhood and later life.

This study is attached to the HeadStart Knowsley Programme being carried out by Knowsley Council, with support and funding from the Big Lottery Fund. This programme aims to build resilience in young people aged between 10 and 16 in Knowsley. Following phase one of the programme and a successful bidding process, HeadStart Knowsley was awarded £500,000 in July 2014 by Big Lottery to fund a 'test and learn' phase (phase two). As part of this test and learn phase different services and projects were commissioned by Knowsley Council to see what improves resilience in local young people. These projects and activities have been evaluated to assess the impact on young people's resilience levels. Judo Education is one such intervention and forms an integral part of the study reported here.

A number of studies supported by AQR involving the mental toughness measure MTQ48 have been carried out in Knowsley. The various pieces of research focused on the links between mental toughness and attainment. Results from the studies suggest that there is a significant correlation between mental toughness and a child's performance in Key Stage Two Assessments at age 11, and found significant correlations between the various elements of mental toughness and performance in English and Maths. However, to date, Knowsley Council have not explored the merit of interventions designed to improve this important psychological characteristic.

Aims and Objectives

- To explore the link between mental toughness and resilience using the mental toughness questionnaire MTQ48 and the Resilience Scale for Adolescents READ in an intervention and control group.

- To study the impact of a single intervention within Knowsley's HeadStart programme on resilience and mental toughness in young people from a Knowsley Primary School.
- To use semi-structured discussions to understand how young people experienced the intervention and the measures that were used to evaluate its impact on resilience and mental toughness.
- To reduce health inequalities in Knowsley by introducing effective evidence-based practice into local schools and by improving staff knowledge of mental toughness and mental health.

Methods

This was a mixed methods study which involved an 'intervention' and a 'control' group. Both groups of pupils completed two questionnaires before and after the HeadStart intervention and a selection of pupils from the intervention group took part in focus group discussions following completion of the intervention.

The intervention included in this study was resilience-based Judo Education, which is one of the projects currently being commissioned by Knowsley Council as part of the test and learn phase of the HeadStart Programme. Judo Education is concerned with teaching children both the physical and psychological aspects of Judo. The course emphasises the importance of qualities such as discipline, respect and team work, in the hope that participants will be able to control themselves and behave in a respectful way that will show itself in day to day life. In particular, Judo Education aims to:

- Improve concentration and listening skills
- Teach self control
- Promote etiquette and respect
- Reduce frustration and anger
- Encourage children to experience winning and losing and behaving appropriately
- Teach children to control themselves in a competitive environment
- Reward success and achievement
- Improve fitness

Judo Education providers have said that they often see a significant improvement in confidence in those that participate in the course. Supporting this, literature states that "traditional Martial Arts training programmes not only teach physical skills and competitiveness, but also positive values such as self-confidence" (Roux, 2009).

Setting

This research was based in a Knowsley Primary School identified as taking part in the HeadStart Knowsley Programme.

Subjects and sampling

38 participants took part in the study. 20 pupils formed the intervention group and the remaining 18 made up the control group. Both the intervention and control groups were slightly overrepresented by girls (65% of the intervention group and 61.1% of the control group). Statistical analysis shows that there was no significant difference in sex distribution between the two groups.

All pupils that were chosen to participate in the study were chosen at random by the Primary Schools' Head Teacher. The Head Teacher, teaching staff that helped coordinate the study, and the participants, were briefed and informed about the purpose of the study, as well as the voluntary basis of their participation.

Procedure

Mental Toughness measure

The mental toughness instrument, the Mental Toughness Questionnaire 48 (MTQ48), was developed by AQR in collaboration with Professor Peter Clough and Dr Keith Earle. It is a 48 item questionnaire that is based around the 4Cs. The 4Cs are represented by:

1. Challenge: whether a person sees problems as opportunities for self-development;
2. Commitment: deep involvement with whatever one is doing;
3. Control - emotional control: concerns keeping anxieties in check; life control: perceived influence;
4. Confidence - in abilities: high sense of self belief and less dependency on external validation; interpersonal confidence: being assertive when interacting with others.

Construct validity of the MTQ48 has been supported with significant relations found between MTQ48 scores and pain tolerance (Crust, Clough). Research has also found significant relations between MTQ48 scores, optimism and coping skills (Nicholls et al., 2008). In terms of reliability, the overall internal consistency of the MTQ48 has generally been reported at 0.9 or above (Kaiseler et al., 2009).

The reading age for the item databank is 9+ years of age.¹ A copy of the questionnaire can be found in appendix one, alongside a 'bubble text' version that simplifies the questions. The bubble text version can be used with those who are at the lower end of the age recommendation.

Resilience measure

The Resilience Scale for Adolescents (READ) was developed as an adaptation of the Resilience Scale for Adults (RSA) for specific use with adolescents. The measure contains 5 factors: (1) personal competence, 2) social competence, 3)

¹ AQR Mental Toughness and the Development of Young People:
<http://www.aqr.co.uk/sites/default/files/MTQ48%20-Education%20&%20Young%20People.pdf>

structured style, 4) family cohesion, 5) social resources. The RSA's response set was changed to a Likert-type scale as the semantic differential used in the RSA proved too difficult for teens. Again this is a validated measure (Soest et. al, 2009).

Participants in both the intervention and control groups were asked to complete the MTQ48 and the READ before the six week resilience-based Judo Education course began. By measuring both mental toughness and resilience before and after the resilience-based activity, it was hoped that the link between the two concepts could be assessed within a process of change.

Whilst all 38 participants completed the READ and MTQ48, it was only the participants who formed the intervention group that took part in Judo Education. Following completion of the six week Judo Education course, all participants from the intervention group and control group were asked to complete both questionnaires for a second time to evaluate the impact of the activity on resilience and mental toughness levels.

Once the 'follow-up' questionnaires had been completed, participants from the intervention group were asked to take part in short group discussions using a semi-structured interview approach. A total of 12 pupils (6 boys and 6 girls) from the intervention group took part in two separate discussions. Each discussion lasted approximately 10 minutes. During these discussions, pupils were asked to reflect on their experiences during the Judo Education course, specifically whether or not they felt it had changed their behaviour in any way. Pupils were also asked about the measures that were used during the study; in particular whether or not they fully understood what the questions were asking them.

Ethical approval

This study was subject to a full university ethical review panel and received approval in September 2015.

Results

The relationship between Resilience and Mental Toughness.

The relationship between mental toughness and resilience before the intervention was measured using a Pearson correlation. A strong link between mental toughness and resilience was found ($r = -.734$, $P < 0.01$). Following the intervention, a strong correlation remained between the change in resilience and mental toughness scores ($r = -.626$, $P < 0.01$). As such, participants who experienced an improvement in their mental toughness similarly saw an increase in their resilience. By means of example, a participant who had one of the largest improvements in resilience after the intervention also experienced the highest increase in their mental toughness score. Correspondingly, for those who saw a drop in their mental toughness score, a decrease in resilience also occurred; 71% of those whose mental toughness reduced also saw a reduction in their resilience. The participant who had the largest drop in resilience also had the largest drop in mental toughness. These results alongside the

strong correlation that was shown, demonstrate that these two psychological attributes tend to change together.

The effect of the intervention

The difference score between baseline and follow-up of resilience and mental toughness was calculated for each individual. These difference scores were subjected to independent t-tests in which the change in scores was compared between the intervention and the control group. No significant differences were found between the groups for either resilience ($t(1,37) = .885$, ns) or mental toughness ($t(1,37) = .710$, ns) .

The mean average for the change in mental toughness scores for the judo group was -0.1 compared to 0.556 for the control group. The standard deviation for mental toughness in the judo group is however larger than that of the control group, indicating a variance of scores in the judo group, suggesting that mental toughness levels did improve for some participants. See table 2.

Table 1: Baseline and follow up for resilience and mental toughness for intervention and control group

| Intervention | Baseline | | Follow-up | |
|--------------|------------|----|------------|----|
| | Resilience | MT | Resilience | MT |
| M | 28 | 8 | 28 | 8 |
| F | 49 | 5 | 42 | 5 |
| F | 45 | 6 | 44 | 4 |
| F | 44 | 6 | 45 | 6 |
| F | 39 | 7 | 36 | 8 |
| F | 28 | 6 | 30 | 5 |
| F | 51 | 5 | 62 | 5 |
| F | 43 | 5 | 50 | 4 |
| F | 36 | 7 | 55 | 4 |
| M | 65 | 4 | 35 | 4 |
| F | 52 | 2 | 38 | 4 |
| M | 35 | 7 | 28 | 9 |
| F | 50 | 7 | 28 | 10 |
| M | 62 | 3 | 45 | 2 |
| F | 64 | 4 | 75 | 1 |
| F | 29 | 10 | 33 | 9 |
| M | 63 | 3 | 57 | 4 |
| M | 66 | 6 | 54 | 7 |
| F | 103 | 1 | 116 | 1 |
| M | 41 | 3 | 31 | 3 |
| Control | Baseline | | Follow-up | |
| F | 31 | 7 | 28 | 8 |
| F | 32 | 5 | 38 | 5 |
| F | 41 | 6 | 35 | 5 |

| | | | | |
|---|----|---|----|---|
| M | 54 | 5 | 68 | 4 |
| F | 42 | 7 | 37 | 7 |
| F | 59 | 3 | 59 | 3 |
| M | 81 | 2 | 59 | 3 |
| M | 50 | 4 | 56 | 4 |
| F | 45 | 5 | 35 | 6 |
| M | 53 | 6 | 29 | 8 |
| M | 48 | 8 | 39 | 8 |
| M | 60 | 4 | 66 | 3 |
| F | 32 | 9 | 39 | 9 |
| M | 66 | 2 | 65 | 2 |
| F | 39 | 7 | 31 | 8 |
| F | 46 | 3 | 52 | 2 |
| F | 53 | 4 | 63 | 3 |
| F | 57 | 5 | 62 | 5 |

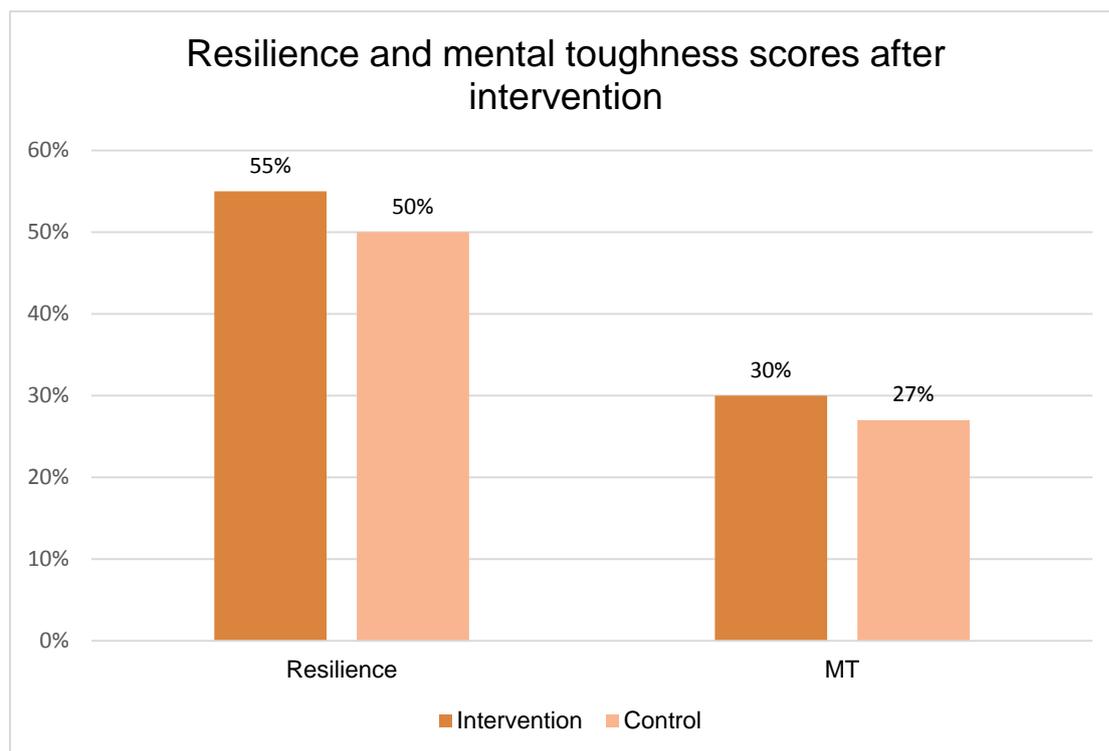
Table 2: Mean and standard deviation for change in MT and resilience in both groups

| | Mental toughness | | Resilience | |
|---------------------|------------------|--------------------|-------------|--------------------|
| | Mean change | Standard deviation | Mean change | Standard deviation |
| Intervention | -.1000 | 1.55259 | -2.0500 | 12.59689 |
| Control | .0556 | .87260 | -1.5000 | 10.38806 |

The mean change in resilience scores in the intervention group was -2.05 compared to -1.5 for the control group. As a lowered score with the READ represents a higher level of resilience, a negative result shows an improvement in resilience. As such the change in resilience scores for the intervention group can be considered as positive, although not significant. As with mental toughness, the standard deviation reflects more variance for resilience scores in the intervention group.

Whilst the independent samples t-tests show no overall significance in the change in resilience and mental toughness scores following the intervention for the group as a whole, it is important to note that for some participants significant improvements in both resilience and mental toughness are apparent. In terms of resilience, 55% of the judo group saw an improvement in their scores after the intervention. In comparison, 50% of the control group experienced an increase in resilience over the six week period. For mental toughness, 30% of the intervention group saw an increase, compared to 27% in the control group. This would imply that the intervention had a greater effect on participant's resilience than it did on their mental toughness. See Figure 1.

Figure 1: Percentage of improvement in MT and resilience



For those participants whose mental toughness improved in the intervention group, two participants (10% of the judo group as a whole) moved from a low to a desired mental toughness score, according to the AQR mental toughness scale set out in figure 2. This is the desirable outcome of the activity. Three judo participants moved from a desired score to a high mental toughness score; whilst this can be seen as a positive as mental toughness is improving, there is a danger that those within the higher quartile of mental toughness scores are “too tough” and as such may lack important qualities such as empathy.

In comparison, fewer participants from the control group saw an improvement in their mental toughness scores. The majority of the control group experienced no change in their mental toughness (44%) at all; however 27% of participants saw an increase. Although there was a 27% improvement in mental toughness in the control group, unlike with the intervention group there was no move in any of the participants from a low mental toughness score to a desired mental toughness score. Two participants moved from a desired score to a high mental toughness score however, as aforementioned, this is not necessarily a positive given that being ‘too tough’ may impact on important qualities such as empathy. It is important to note that two participants moved from a desired to a low mental toughness score in the control group whereas just one participant from the intervention group moved from the desired to the low mental toughness score.

Figure 2: Mental toughness scores before and after intervention (intervention group)

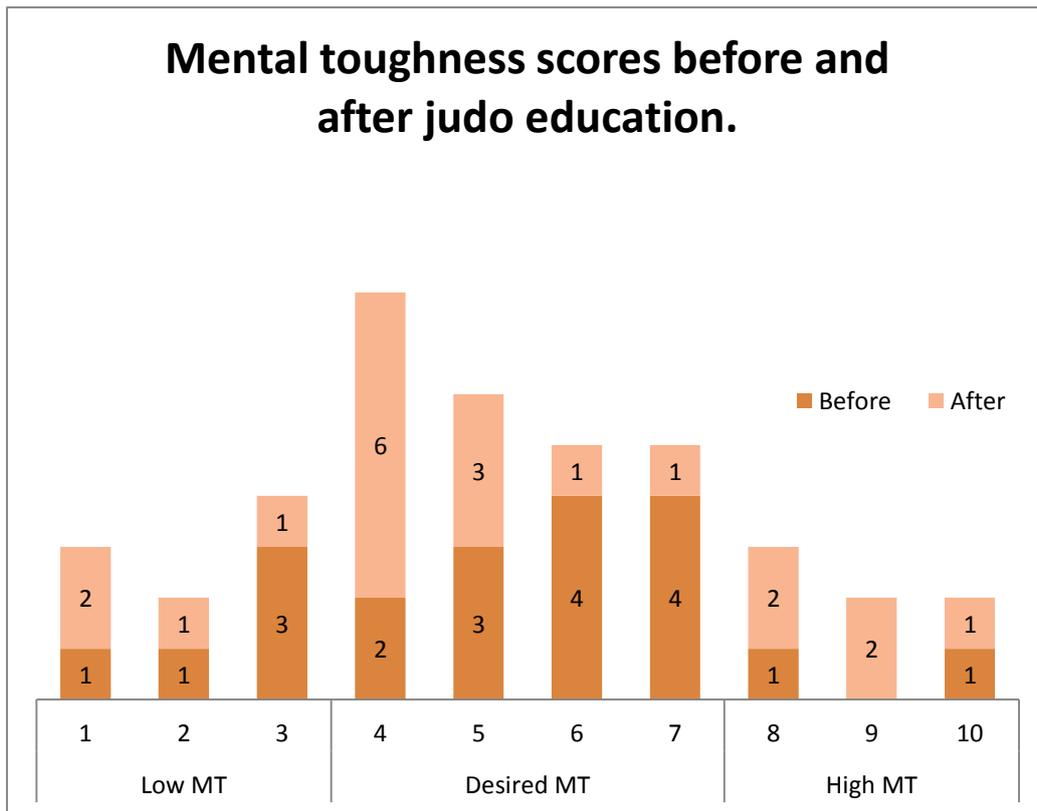
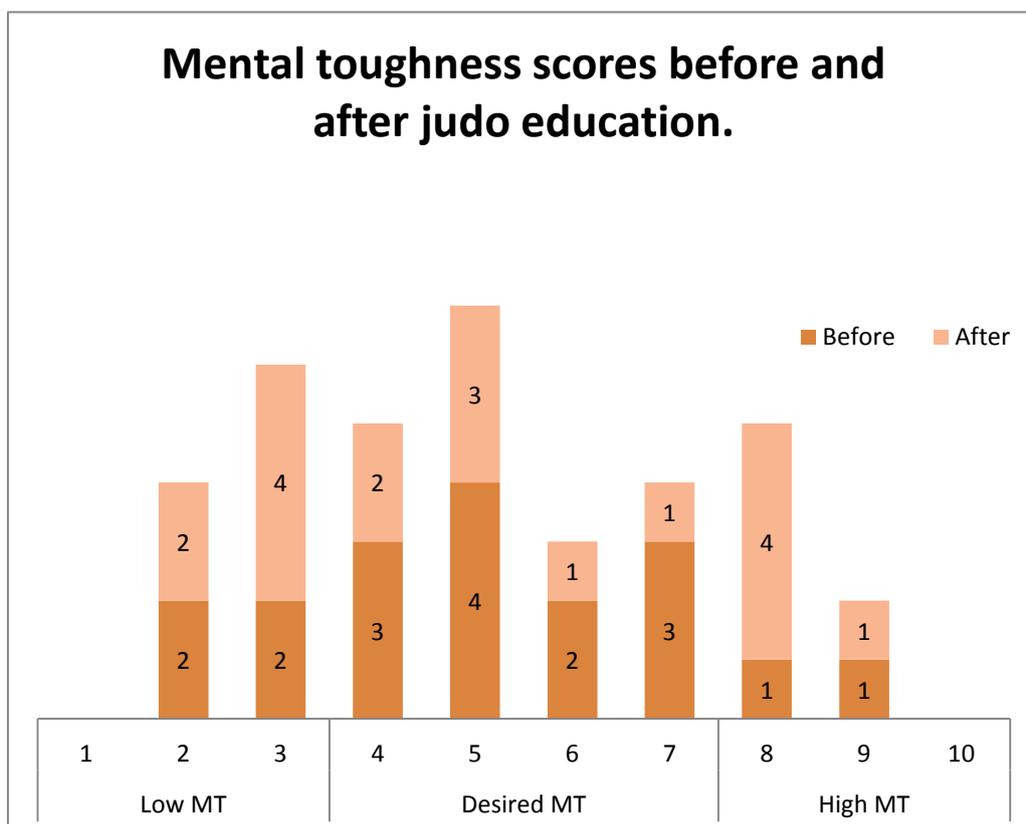


Figure 3: Mental toughness scores before and after intervention (control group)

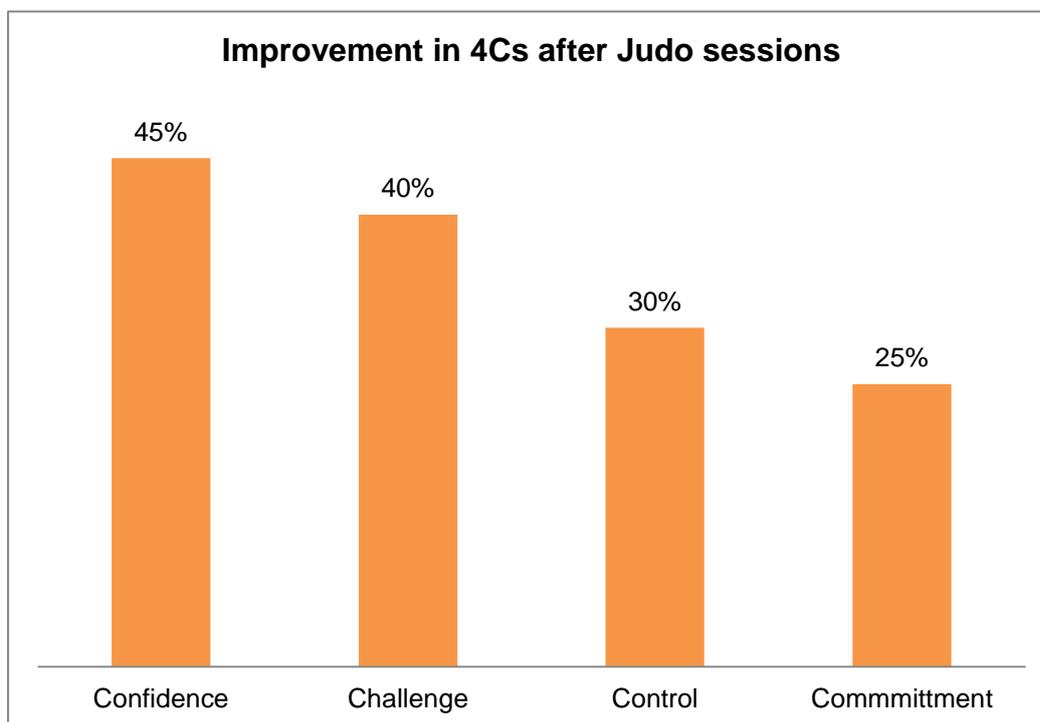


Seven participants from the judo group (35%) saw a decrease in their overall mental toughness scores, with one participant moving from a desired mental toughness score to a low score. Six of the seven participants who experienced a decrease in mental toughness (85.7%) were girls, suggesting that judo, a high contact sport involving 'grappling' and so potentially associated with masculinity by young people, may not be the best way in which to build resilience and mental toughness in girls. This could potentially be linked to issues with body image/consciousness, problems with ability and a lack of interest in an activity that involves fighting. Similarly there were seven participants who saw a decrease in their resilience; all of these participants were also girls.

Semi-structured interviews with open-ended questions were conducted in order to explore how the students felt about Judo Education and the various measures that they had completed as part of the study. The interview results largely resonate with what the statistical data revealed in relation to issues with gender. The pupils were asked how they found the education judo intervention and the majority stated that they had really enjoyed the activity and that they found it to be fun and enjoyable. There were a few participants however who were less enthusiastic and stated that they found the activity to be "*just okay*". Participants who were less enthusiastic about the judo education sessions tended to be girls, which supports the results generated from the quantitative data. Those who were more enthusiastic about the judo sessions tended to be boys, using expressions such as: "*It was boss, I loved it*" and "*I would do it every year because it's really fun.*" Furthermore, the boys responded positively when they were asked if they would participate in the activity again or join an after school club: "*I've already said yes yes yes yes yes!*"

Results indicate that there was some improvement in confidence levels amongst the intervention group, resonating with what the providers of Judo Education suggested would happen. However, this change in confidence did not reach statistical significance when the change in confidence scores in the intervention group were compared to those of the control group, ($t(1,37) = .786$ ns). 45% of the intervention group experienced an improvement in confidence levels after the judo sessions, compared to a 20% increase in confidence levels in the control group. It is important to note however that the improvement in confidence levels amongst the judo group was larger than any of the other components that make up mental toughness (challenge, commitment and control), as shown in the graph below:

Figure 4: Improvement in the 4Cs after the intervention (intervention group)



The discussions largely supported the quantitative data in relation to confidence. When asked whether they thought Judo Education had changed their behaviour in any way, almost all of the participants in the group discussions said that they felt that their confidence levels had improved following the intervention; *“it made me feel a little bit more confident.”* Pupils said that they would recommend the activity to a friend in order to improve their confidence, as exemplified by statements such as *“if they were shy or didn’t get involved in much this would improve their confidence.”*

Discussion

Results from the quantitative data demonstrate a significant association between mental toughness and resilience at baseline and also show that the two attributes tend to change together in response to an intervention. This supports the argument that mental toughness merits greater consideration and further study as an element of resilience. By acknowledging the relationship between mental toughness and resilience, it allows for a new focus on mental toughness in improving mental health and wellbeing and a more specified focus on the different elements that make up mental toughness, the 4Cs. This means that specific aspects of mental toughness can be identified and improved via interventions that are designed to work with one or a number of the 4Cs. This is something the Big Lottery could look to include and focus on going forward in the programme.

Indications exist in both the qualitative and quantitative results that Judo Education is perhaps not suitable for all young girls. Gender norms and roles influence the appreciation of judo education and how participants experience it, including any benefits. As such, identified effects are gendered. Supporting findings of studies into other sport and mental health initiatives recognise this as being relatively common in sports that are more usually associated with males and masculinity. By means of example, a study observed that participants in sports which are traditionally male-dominated, such as combat sports and team sports perceived as 'flag carriers of masculinity', may face particular challenges with regard to gender negotiation (Sisjord, Kristiansen, 2009). More specific to judo, Guerandel and Mennesson found differentiated behaviours, according to sex, throughout judo sessions in mixed-sex non-adversarial situations and during the fight when pride was paramount. It was suggested that the behaviours constitute a sort of out of frame communication, reinforcing gender hierarchy (Guerandel, Mennesson, 2007). This may mean that providers of these types of more male associated activities and sports may need to look at the way groups and sessions are structured and organised in order to avoid gender issues from forming which, as seen with this sample, can have a negative impact on resilience and mental toughness in young people. Furthermore, promoting activities that have a tendency to unintentionally encourage gender norms as part of a wider universal offer may have a negative and undesired effect on those in receipt of the activity. This is something that HeadStart Knowsley and the Big Lottery should look to avoid going forward into phase three of the programme.

There were mixed responses for participant's experiences for the measures used throughout the study. Some pupils found the questions easy to understand and answer whilst others found the questions too difficult; *"they were simple but hard to answer at the same time."* Participant feedback also found that the length of the measures and the time that it took to complete them were a problem. Participants commented that they were *"a bit too long"* and that they *"didn't have the patience to do it all."* This is an important finding that both people who design and produce psychometric measures and organisations and groups looking to use measures such as these need to consider and be aware of when working with young people. If measures are too long then it could potentially lead to disengagement with the questions and a general disinterest in the process, which may impact on the validity of the results.

The importance of mental toughness as an enabler of good mental health and wellbeing is something that has been recognised by the primary school that was involved in the study. The MTQ48 generates two reports once it has been completed; a development report and a coaching report. These reports were well received by the school and have been used to work with participants who were identified as having low mental toughness. As well as giving an overall mental toughness score, the report provides individual scores for each of the 4Cs and discusses in detail what these scores mean and how they can be improved. This is a feature that was particularly well received as it meant that the school could target specific aspects that needed to be worked on, for example confidence. Though this was not a central aspect of the study, any positive impacts can potentially link to aspects of educational achievement and learning of other life skills.

Limitations

This study faced a number of limitations. Most importantly, it was a small scale study with a small sample. This meant that it was likely to have been 'under-powered' and therefore difficult to find significant relationships from the quantitative data, as statistical tests normally require a larger sample size to ensure a representative distribution of the population and to be considered representative of groups of people to whom results will be generalised or transferred. If this study was repeated with a larger sample the results may potentially show statistical significance.

The Judo Education programme that the intervention group participated in was relatively short with just six weekly one hour sessions. This was due to the fact that sessions had to be adapted to the school timetable during a particularly short term (November – December). In addition, not all participants attended every session, with 30% of the group missing at least one session. Therefore the short duration of the course may have impacted on the results, making it fair to assert that more time may have been needed to demonstrate a significant impact on resilience and mental toughness in the group.

The age of the participants in the study was also a further limitation. According to the literature, cognitive and verbal skills required to answer self-esteem based questions that ask people to rate their agreement with statements such as, "I feel that I am a person of worth" as included in the MTQ48 and READ measures, do not develop before age eight (Cyencek, Meltzoff, 2016). They require a certain level of introspection and verbal abilities. Therefore, it is fair to conclude that some participants in the study were too young to fully understand and correctly answer the questions that were included in the measures used throughout the study, with some participants as young as nine. As already mentioned, most participants said that they did understand the questions, especially with the help of teaching assistants, however it is important that HeadStart Knowsley and organisations such as the Big Lottery ensure that the measures used going forward into phase three of the programme are practical and suitable for the different ages included in the programme.

The methods used for data collection throughout this study also presented limitations. In relation to the quantitative data, the measures used were self-report questionnaires that did not facilitate any elaboration as to answers given. This is important to bear in mind because answers may have been influenced by other occurrences apart from the judo intervention. The role of uncontrolled 'confounding' variable is potentially large when group sizes are small. This makes it difficult to truly identify if the intervention alone had an effect on the answer provided. Also whilst the use of a focus group was the most timely way in which to extract qualitative data from the participants, it proved difficult to obtain information from the young people within this context. One to one interviews may have been more fruitful.

Conclusion

In summation, the findings from this study show that there is a strong correlation between mental toughness and resilience in young people. This conclusion is based on the fact that both concepts tended to be in sync with one another after the intervention, i.e. resilience increased/decreased in line with mental toughness. As such, it is important that mental toughness be acknowledged and recognised as an element that helps to build resilience. Whilst Judo Education did not improve mental toughness and resilience for all of the participants in the intervention, it is important to note the strong effect that it had on individual participants. However as the findings indicated that Judo Education, to an extent, reinforces gender norms, HeadStart Knowsley should consider how the sessions are structured and delivered if they decide to roll it out as a borough wide activity during phase three of the Programme, i.e. conducting boy or girl only judo sessions or adapting elements of the judo course to ensure that it caters for the different needs of boys and girls. HeadStart Knowsley and the Big Lottery should also be aware of the implications of using measures that are not age appropriate, and should avoid the use of time consuming and lengthy questionnaires.

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Appendices

* Please note that for copyright reasons the Resilience Scale for Adolescents (READ) cannot be published.

Appendix one: MTQ48

Please indicate your response to the following items by circling one of the numbers, which have the following meaning;

1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree

Please answer these items carefully, **thinking about how you are generally**. Do not spend too much time on any one item.

| | «Disagree | | Agree» | | |
|---|-----------|---|--------|---|---|
| 1) I usually find something to motivate me | 1 | 2 | 3 | 4 | 5 |
| 2) I generally feel in control | 1 | 2 | 3 | 4 | 5 |
| 3) I generally feel that I am a worthwhile person | 1 | 2 | 3 | 4 | 5 |
| 4) Challenges usually bring out the best in me | 1 | 2 | 3 | 4 | 5 |
| 5) When working with other people I am usually quite influential | 1 | 2 | 3 | 4 | 5 |
| 6) Unexpected changes to my schedule generally throw me | 1 | 2 | 3 | 4 | 5 |
| 7) I don't usually give up under pressure | 1 | 2 | 3 | 4 | 5 |
| 8) I am generally confident in my own abilities | 1 | 2 | 3 | 4 | 5 |
| 9) I usually find myself just going through the motions | 1 | 2 | 3 | 4 | 5 |
| 10) At times I expect things to go wrong | 1 | 2 | 3 | 4 | 5 |
| 11) "I just don't know where to begin" is a feeling I usually have when presented with several things to do at once | 1 | 2 | 3 | 4 | 5 |
| 12) I generally feel that I am in control of what happens in my life | 1 | 2 | 3 | 4 | 5 |
| 13) However bad things are, I usually feel they will work out positively in the end | 1 | 2 | 3 | 4 | 5 |
| 14) I often wish my life was more predictable | 1 | 2 | 3 | 4 | 5 |
| 15) Whenever I try to plan something, unforeseen factors usually seem to wreck it | 1 | 2 | 3 | 4 | 5 |
| 16) I generally look on the bright side of life | 1 | 2 | 3 | 4 | 5 |
| 17) I usually speak my mind when I have something to say | 1 | 2 | 3 | 4 | 5 |
| 18) At times I feel completely useless | 1 | 2 | 3 | 4 | 5 |
| 19) I can generally be relied upon to complete the tasks I am given | 1 | 2 | 3 | 4 | 5 |
| 20) I usually take charge of a situation when I feel it is appropriate | 1 | 2 | 3 | 4 | 5 |

| | «Disagree | | | Agree» | |
|--|-----------|---|---|--------|---|
| 21) I generally find it hard to relax | 1 | 2 | 3 | 4 | 5 |
| 22) I am easily distracted from tasks that I am involved with | 1 | 2 | 3 | 4 | 5 |
| 23) I generally cope well with any problems that occur | 1 | 2 | 3 | 4 | 5 |
| 24) I do not usually criticise myself even when things go wrong | 1 | 2 | 3 | 4 | 5 |
| 25) I generally try to give 100% | 1 | 2 | 3 | 4 | 5 |
| 26) When I am upset or annoyed I usually let others know | 1 | 2 | 3 | 4 | 5 |
| 27) I tend to worry about things well before they actually happen | 1 | 2 | 3 | 4 | 5 |
| 28) I often feel intimidated in social gatherings | 1 | 2 | 3 | 4 | 5 |
| 29) When faced with difficulties I usually give up | 1 | 2 | 3 | 4 | 5 |
| 30) I am generally able to react quickly when something unexpected happens | 1 | 2 | 3 | 4 | 5 |
| 31) Even when under considerable pressure I usually remain calm | 1 | 2 | 3 | 4 | 5 |
| 32) If something can go wrong, it usually will | 1 | 2 | 3 | 4 | 5 |
| 33) Things just usually happen to me | 1 | 2 | 3 | 4 | 5 |
| 34) I generally hide my emotion from others | 1 | 2 | 3 | 4 | 5 |

| | «Disagree | | | Agree» | |
|---|-----------|---|---|--------|---|
| 35) I usually find it difficult to make a mental effort when I am tired | 1 | 2 | 3 | 4 | 5 |
| 36) When I make mistakes I usually let it worry me for days after | 1 | 2 | 3 | 4 | 5 |
| 37) When I am feeling tired I find it difficult to get going | 1 | 2 | 3 | 4 | 5 |
| 38) I am comfortable telling people what to do | 1 | 2 | 3 | 4 | 5 |
| 39) I can normally sustain high levels of mental effort for long periods | 1 | 2 | 3 | 4 | 5 |
| 40) I usually look forward to changes in my routine | 1 | 2 | 3 | 4 | 5 |
| 41) I feel that what I do tends to make no difference | 1 | 2 | 3 | 4 | 5 |
| 42) I usually find it hard to summon enthusiasm for the tasks I have to do | 1 | 2 | 3 | 4 | 5 |
| 43) If I feel somebody is wrong, I am not afraid to argue with them | 1 | 2 | 3 | 4 | 5 |
| 44) I usually enjoy a challenge | 1 | 2 | 3 | 4 | 5 |
| 45) I can usually control my nervousness | 1 | 2 | 3 | 4 | 5 |
| 46) In discussions, I tend to back-down even when I feel strongly about something | 1 | 2 | 3 | 4 | 5 |
| 47) When I face setbacks I am often unable to persist with my goal | 1 | 2 | 3 | 4 | 5 |
| 48) I can usually adapt myself to challenges that come my way | 1 | 2 | 3 | 4 | 5 |

| MTQ Item | Bubble Text – this means |
|--|--|
| 1. I usually find something <i>to motivate me</i> | More often than not when asked to do a piece of work I can find something that gets me going and keeps me interested in that work. |
| 2. I generally feel in <i>control</i> | Most of the time I feel that things go the way I want them to go and this is down to the things I do. |
| 3. I generally feel that <i>I am a worthwhile person</i> | Most of the time I feel useful |
| 4. <i>Challenges usually bring out the best in me</i> | Most of the time I respond well to being asked to do something new or different. I work best when I am put under a bit of pressure |
| 5. <i>When working with other people I am usually quite influential</i> | When working with others, what I do or say seems to make a difference. |
| 6. <i>Unexpected changes to my routines generally throw me</i> | Changes which come out of the blue, like a new piece of work, can “knock me off track”. |
| 7. <i>I don't usually give up under pressure</i> | I keep going even when I am stressed. |
| 8. <i>I am generally confident in my own abilities</i> | I know I can do things well most of the time. |
| 9. I usually find myself <i>just going through the motions</i> | Most of the time I do what I have to do but I don't have any real interest in it. |
| 10. At times I expect things to go wrong | On occasion I expect things will not work or go to plan. |
| 11. <i>“I just don't know where to begin” is a feeling I usually have when presented with several things to do at once</i> | When I have lots of things to do at the same time I can often feel like I don't know where to start. |
| 12. I generally feel that I am <i>in control</i> of what happens in my life | When it comes to things that matter to me, I mostly feel that I am in charge of what happens. I make things happen |
| 13. However bad things are, I usually feel they will work out positively in the end | Even when things are going badly I usually believe that it will all work out. |
| 14. I often wish my life was more <i>predictable</i> | I often wish there were fewer surprises and I knew what was coming. |
| 15. Whenever I try to plan something, <i>unforeseen factors</i> usually seem to wreck it | Whenever I try to plan something, things that I hadn't planned for often seem to wreck my plans. |

| | |
|---|--|
| 16. I generally look on the bright side of life | Mostly I see the good side when anything happens. |
| 17. I usually speak my mind when I have something to say | I don't keep my thoughts to myself if I think they should be said. I let people know what I am thinking |
| 18. At times I feel completely useless | Some of the time I feel I'm no good at anything. I do not feel that I can make a difference to anything I do |
| 19. <i>I can generally be relied upon to complete the tasks I am given</i> | If someone gives me something to do, I will usually get it done. |
| 20. <i>I usually take charge of a situation when I feel it is appropriate</i> | If it's needed, I will often take the lead to take charge of what is going on. |
| 21. I generally find it hard to relax | Sometimes it's hard for me to calm down or "chill out". |
| 22. I am easily distracted from tasks that I am involved with | When doing something I will often let my mind wander away from what I am doing. Other things seem to be more important than the task I am doing |
| 23. I generally cope well with any problems that occur | I am usually good at dealing with things that go wrong. |
| 24. I do not usually <i>criticise myself</i> even when things go wrong | I tend not to blame myself when things don't go right. |
| 25. I generally try to give 100% | I try to give everything I've got and always try my hardest |
| 26. When I am upset or annoyed I usually let others know | I don't keep my feelings to myself if I'm upset or angry. |
| 27. I tend to worry about things well before they actually happen | When I know something is going to happen I worry about it long before it actually happens. |
| 28. I often feel <i>intimidated</i> in social gatherings | I often feel nervous or uncomfortable when mixing with lots of people. |
| 29. When faced with difficulties I usually give up | When things look hard more often than not I will give up. |
| 30. I am generally able to react quickly when something unexpected happens | I am good at responding quickly when something I didn't expect happens. |
| 31. <i>Even when under considerable pressure I usually remain calm</i> | Even when there is a lot to do and it's very important, I don't feel panicky. |
| 32. If something can go wrong, it usually will | When I plan to do something I often think it's going to go wrong in some way. |
| 33. Things just usually happen to me | Whatever I do, I find that I'm not in control and things just happen to me. I tend to get pushed into 'going with the |

| | flow' |
|---|---|
| 34. I generally hide my emotion from others | People don't usually see my feelings even when I am upset, angry or happy. |
| 35. I usually find it difficult to make a <i>mental effort</i> when I am tired | When I am tired I find it difficult to think hard about what I am doing. |
| 36. When I make mistakes I usually let it worry me for days after | When I've made a mistake I can't get it out of my head for a long time. |
| 37. When I am feeling tired I find it difficult to get going | When I'm feeling tired I find it hard to get started. |
| 38. I am comfortable telling people what to do | I have no problem telling people what they should be doing. |
| 39. I can normally <i>sustain high levels of mental effort</i> for long periods | Most of the time I can keep my mind working hard on something when I need to do it for a long time. |
| 40. I usually look forward to <i>changes in my routine</i> | I really look forward to doing different things most days. I don't like the thought of doing the same thing every day |
| 41. I feel that what I do tends to make no difference | Mostly I feel useless – what I do doesn't seem to matter/help. |
| 42. I usually find it hard to <i>summon enthusiasm</i> for the tasks I have to do | When I have a job to do, most of the time I find it hard to get excited about it. |
| 43. If I feel somebody is wrong, I am not afraid to argue with them | I am happy to challenge somebody if I think they are wrong. |
| 44. I usually enjoy a <i>challenge</i> | I like being stretched and testing my abilities. I like to do things which seem difficult for me but can be achieved |
| 45. I can usually <i>control my nervousness</i> | Most of the time I can stay calm whatever is happening. Nothing seems to worry me. |
| 46. In discussions, I tend to back-down even when I feel strongly about something | When speaking with others I will let them have their own way even if I believe they are wrong. |
| 47. <i>When I face setbacks I am often unable to persist with my goal</i> | When things start to go wrong I find I am more likely to give up. |
| 48. I can usually <i>adapt myself</i> to challenges that come my way | When I have to respond to something, I can usually prepare myself and change if I have to. |