
Exploring aspects of cognitive development and mental health awareness as part of health promotional goal in snooker

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The aim of the present study is to ascertain whether playing snooker sustains development of mental cognition from acquiring and developing knowledge of the game of snooker for the 'everyday snooker player' that plays snooker as a hobby or pastime. A total of 1,352 participants has taken part in the Snooker Insight Survey and responded to a variety of questions that covered different aspects of snooker. This study investigated some of the theoretical concepts of cognitive development, mental concentration and other underpinning aspects of mental health in sport, with a view of looking specifically through the lens of 'everyday snooker player'. Outcomes suggest that the game can be considered as a positive health promotional activity, which can also help to develop an individual knowledge, concentration and focus as an activity of living, as well as proposing that the game of snooker is being used as an encouraging and supportive activity that can potentially benefit an individual's mental health and well-being. This work poses an opportunity for further research relating to health and snooker in the future, especially to explore a variety of dimensions associated with snooker from an array of topics that centre on a very broad and holistic scope around issues in health and social care needs of individuals and communities.

Keywords: cognition, health promotion, mental health, snooker, snooker pedagogy

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BACKGROUND

Snooker as a game was thought to have been created in 1875. Since then, it has propelled into a major competitive professional sport that is recognised worldwide. From the first World Snooker Championship in 1927 to the emergence of televised Snooker (Senaux & Vaughan, n.d.), snooker has had a history of being associated with negative aspects of physical and mental health (Birchard, 1999).

But no longer is snooker associated with tobacco or alcohol companies as sponsors of all tournaments, but snooker is now being seen as a sport that encompasses a psychology of concentration and competition that has the possibilities of developing healthy mental cognition (Baker & Farrow, 2015; Butler, 1997; Moran, 1996). It is this positive aspect of mental cognition and mental health in snooker the present study focused on as a major part of the secondary analysis.

The present study has looked into areas of health promotion around snooker. Findings will be disseminated from research carried out in collaboration with the World Professional Billiards and Snookers Association (WPBSA), a governing body and authority in the world of snooker. The research supports and extends the vision of WPBSA from its recent Snooker Insight Survey (2016), a survey which was carried out to investigate the potential of widening participation for playing and promoting snooker as a whole. One of the considerations for the survey was to widen participation in snooker as an intention to grow awareness of mental health in snooker.

When the WPBSA signed up to the Mental Health Charter in April 2016, there was a need to create an awareness of mental health in the world of snooker. By signing the Mental Health Charter (The Football Association, 2015), this ensured that the WPBSA are committed to making a positive contribution to mental health awareness within snooker. By signing up to the Mental Health Charter, the WPBSA has coming to the following focal points surrounding the Mental Health Charter.

In order for the WPBSA to support these measures of the Mental Health Charter, the WPBSA carried out the Snooker Insight Survey in April 2016. Approximately 1,400 participants responded to a questionnaire around the holistic aspects of snooker, from playing the game of snooker to the awareness of mental health in snooker. From the results obtained from the Snooker Insight Survey, secondary data have been analysed.

The study proposes to explore areas around cognitive development and aspects of mental health specifically through the lens of participants actively playing snooker. The purpose of the research is to add to the existing knowledge base around mental health in sport, specifically snooker. In addition, the sole drive for this study is to ascertain whether playing snooker develops or helps to sustain mental cognition in different age groups when playing snooker, as well as investigating whether playing snooker is therapeutic in supporting positive mental health. Finally, this research will support all the points made to promote the holistic areas of mental health in snooker so that the benefits of snooker are made aware to the 'everyday player' – the snooker players of all levels.

A cognitive and pedagogical snooker

When players are learning snooker terminology, this enhances cognitive development and knowledge about the game. Kolovelonis & Goudas (2013) support the view of self-regulated learning in sport from their study that individuals who take part in sporting activities are likely to learn a particular sport 'when they experience sequentially observational, emulative, self-controlled, and self-regulated learning'. Part of the learning process of any sport is to acquire the language and terms that are used in

the sport that the individual is playing. This would suggest that sport requires an academic bridge of knowledge in order to enhance and develop the sportsperson's ability and knowledge of their sport.

In terms of language association and acquisition in snooker, Craven (1980) refers to the words and terms used in billiards, pool and snooker as 'sporting jargon'. An example of this is a 'break', which could be defined as potting balls in a sequence in order to accumulate the maximum amount of points in a single 'visit' to the snooker table. Partridge (as cited in Craven, 1980) also describes a 'break' in billiards as a 'consecutive series of scoring strokes'. Simultaneously, the term 'break' in snooker could also mean the commencement of a frame of snooker. This is done by 'breaking' the cluster of red balls with a strike of the cue ball. The red balls are arranged in a triangular shape at the opposite end of the table to the cue ball area, at the start of every frame. A 'frame' in snooker is referred to as the beginning of a snooker game when all the snooker balls are set up in a systematic and conventional order of play. Other common terms used when playing snooker are 'foul', 'baulk end', 'free ball', 'snookered' and many others (WPBSA, 2016). In essence, it can be argued that basic 'snooker terminology' used with snooker assists in cognitive development as anyone playing snooker would need to be familiar with snooker terminology in order to play the game. For the everyday snooker player, using and understanding the definition of the terms in snooker would certainly increase their snooker knowledge around the game.

In order to explore 'cognitive snooker' further, not only do we need to consider the terminology essential for everyday snooker players to understand; everyday snooker players also need to understand how snooker is played and the rules that govern the game. The WPBSA have published and regulated the rules of snooker since the organisation was formed. But for the everyday snooker player, the basic rules of snooker are acquired through experiential learning by either watching snooker being played on television or the individual going to a snooker club to play on a real snooker table. Polito, Kros, & Watson (2003) define experiential learning as 'a process through which knowledge is created through the transformation of experience'. So, this would suggest that the everyday snooker player in snooker will learn from their experiences of the game and by learning the basic rules of snooker. But as for snooker rules and regulations within the professional game, the referees and professional snooker players acquire the knowledge, rules and regulations stipulated by the WPBSA. These rules and regulations in general surround the entire game of snooker. For everyday snooker players to acknowledge the rules of snooker requires the player to learn everything about snooker; this gives some evidence of experiential learning, thus one can say that this is part of one's cognitive development. Solso (as cited in Moran, 2004) supports the idea of cognitive development in sport as a form of sequential information that transforms into a performed action. As an example of how this can be illustrated in snooker is when an everyday snooker player is able to watch a snooker match on television and sequence the stages of the game when playing the game in reality. The everyday player is able to sequence their play by memorising the images that were viewed on television and attempt to re-enact the same play of shots on the snooker table. Hence, this suggests that an everyday player is able to remember the sequence in snooker of potting a red ball (one point) followed by any other coloured ball until all the red balls have been cleared or potted from the snooker ball. Similarly, an everyday snooker player would also be able to acknowledge and establish that each ball is equalled to points and that there is a certain arrangement to each of the coloured snookers ball and its numerical order.

Snooker pedagogy, as this study coins the phrase, can be said to exist similarly within learning and knowledge around areas of common educational subjects. For instance, snooker is vastly underpinned by the subjects of maths (Corliolis, 1835; Hemming, 1899; Davis, 1964, 1967; Mackie, 1982, 1989 [as cited in McCormick & Paechter, 1999]); and physics (Daish, 1972 [as cited in McCormick & Paechter, 1999]). This gives credence to snooker being somewhat a mathematical and scientific sport. With calculative angles and statistical judgements as well as mathematical addition to scoring, and kinetic and potential energy from the movement of the snooker balls grounded by physics, snooker from a pedagogical stance can be said to create the notion of academic or pedagogical learning and knowledge.

McCormick & Paechter (1999) makes a case for snooker being translated as pedagogy by applying the game of snooker as a teaching and learning guide that can be used as an introduction to the uses of practical knowledge in an educational setting. For instance, when applying the method of 'application' from the concept of Bloom's Taxonomy (1956 [as cited in Adams, 2015]) suggests that previously learned information can be translated and utilised in any new situation. This suggests that when everyday snooker player view and learn about snooker skills, techniques and the rules and regulations of playing snooker, they are able to recall their learning and knowledge of the game by transmitting this in their performance when actively playing snooker. McCormick & Paechter (1999) addresses this kind of knowledge of snooker by stating that 'Snooker players are not only skilled at hitting a ball, but know a thing or two about the movement of balls [snooker balls] about the table.' Furthermore, McCormick goes on to compare the knowledge of snooker players similar to the knowledge of physicists and mathematicians by making the assumption that academic knowledge and practical knowledge meet to serve an educative purpose. This asserts that McCormick's approach can confirm the belief of snooker somehow being an academic sport.

Snooker pedagogy and knowledge has always existed, knowing the angles around the table and playing with such precision with the movement of the cue ball around the table is something that was highlighted by snooker's pioneering icons Joe and Fred Davis. Joe Davis demonstrated snooker pedagogy and knowledge through his tutorial book of snooker, *How I Play Snooker* (1975). Davis. In his book, Joe Davis illustrated a programme of study for the game of snooker by going through all the core elements of the game from how to start to lay the game, to techniques on how to stroke the cue ball and make a 'break'. Joe Davis refereed his knowledge as tutelage to the 'everyday player'. Joe Davis comments on how it was a continuous journey of learning the craft of snooker and studying every aspect of the game in order to teach snooker players of all abilities. The aspect of learning in snooker is so fundamental for the game and this is perfectly echoed from the late Joe Davis from two iconic statements:

'It is through this intense study that I have held my own as the world's number one snooker player for so long. But I will go further than that and assert that I have never ceased to improve my snooker.' (Davis, 1975)

The nature of concentration in snooker

Abernethy, Neal, & Koning (1994) published a study investigating proficiency when playing snooker. Their study measured proficiency by the performance of 7 experts, 7 intermediate and 15 novice snooker players. A measured performance of the snooker players of varying abilities was compared by a range of general visual tests and sport-specific perceptual and cognitive tests in an attempt to determine the locus of the expert advantage of the expert snooker player. From the ranges of tests carried out by Abernethy it was revealed that expert snooker players were superior in their ability to both recall and recognise rapidly-presented slides depicting normal game situations, but were not better than novices in recalling information from slides in which the balls were arranged randomly on the table. The expert snooker players group's superiority on the perceptual recall and recognition tasks was consistent with deeper level of encoding for structured (i.e. meaningful) material. Expert snooker players also showed a cognitive advantage beyond the novice players. Nevertheless, both expert and novice snooker players showed calculated thinking prior to taking a shot in a snooker game. The findings from this study showed a certain expertise in 'open' skill sports. It concluded that both experts and novice snooker players use certain similar and distinctive strategies when playing snooker. So, Abernethy's study demonstrates that learning specific skills – whether an expert or novice player in snooker, can be supportive for cognitive development and mental health promotion for snooker as a strategic game. Furthermore, Abernethy et al., (1994) go on to show that the self-paced, static aim sport such as snooker has varying degrees of cognitive development in terms of a deeper structured thought process for aiming

games. Abernethy and his colleagues had findings from their study on aiming sports that resonate with previous research into board games showing equilibrium of results between aiming sports and board games (Wiering, 2010). This suggests that there is a clear distinction between novice and expert players in most games or sports. Abernethy's work concluded that games such as snooker and billiards enhanced competencies in skills and knowledge through visual aiming sports.

As a measurement for the cognitive ability around the game of snooker Chung et al., (2014) conducted a systemic skill test to analyse player performance in snooker. Chung and colleagues found that the snooker skills assessment that were carried out by the snooker players in their study, demonstrated a clear distinction between player abilities from novice, intermediate and professional players. Therefore, from a cognitive perspective stipulated by Chung, snooker skills tests support the idea that individual snooker players, from novice to professional, have a different range of cognitive abilities when playing snooker. This inevitably establishes the fact that there is a range of cognitive characteristics that are distinguishable between novices to expertise in the field of sports (Landers, et al., 1994 [as cited in Moran, 2004]), this is more so in the world of snooker. However, whichever level of competence you are playing at snooker, playing it requires concentration at a constant at its highest level.

It can be said that this is a natural phenomenon that 'everyday players' in snooker to use a level of concentration when they play. Moran (2004) perceives the term concentration in sports as exercising a certain amount of 'mental effort' when playing any type of sport. Moran also suggests a strong relationship between the nature of concentration that combines around the theories and concepts of 'attention'. Moran explains that there are two types of attention that relates to human concentration; these attentive theories are noted as 'selective attention' and 'divided attention'.

Concentration in sport can almost be said to be attributed to success and this is evident from the most elitist sports professionals around the globe. Abernethy (1994, as cited in Moran [2004]) defines the terms selective or focused attention as drive of that seeks only selective information that is only required for the stimulus to perform in sport and any other irrelevant information is left disregarded and unprocessed. Translating this concept when playing snooker can be illustrated when the snooker player 'breaks into the pack' in order to distribute the reds around the table so that he or she has a choice of red snooker balls to pot. After scanning the table with the red snooker balls scattered around the table, the snooker player will then take a decision on potting a red ball, he will concentrate on this potting action, while ignoring any other options of potting any other red snooker balls that may be available to him. In this selective process, the everyday snooker player will also account for where the cue ball will 'land' or stop, ready for the next following shot. This example would suggest that as snooker is a solo sport, there is little or no emphasis of concentrating on any other players apart from when it is their opponent's turn and that if the player chooses to view their play while they are not at the snooker table. So, a snooker player's concentration is never divided, it is solely a concentration that is focused on playing snooker (Moran, 2004).

Overcoming the taboo of mental health in snooker

Though there is little or no academic literature that is written about mental health in snooker, much of the writing regarding mental health in snooker has been publicised by various newspaper articles that highlight mental health issues. This serious side to mental health in snooker has been highlighted by its heroes. It is without conviction that those professional snooker players, notably Mark Allen, Willie Thorne, Graeme Dott, Robert Milkins, Mark King, and the formidable Ronnie O'Sullivan have all not been averse to stating the problematic impact of mental health surrounding the whole canopy of snooker (Nunns, 2016). Snooker can certainly be defined as a psychologically demanding sport as the main component for playing snooker requires a particular focus on the psychological mind. Along with the psychological focus there are the holistic aspects brought by the individual player in the game such

as their physical, emotional and social well-being. Though it can be said that snooker is not particularly physically demanding sport in comparison to other sports such as football, however physical health for both professional and everyday snooker players, plays a part in contributing to aspects of positive mental health.

Mental health and psychological well-being is a large segment of the core root of human life. As a consequence, mental health and well-being have grown in their stature of awareness in society. People are now mindful of the nature of mental health and this is evident throughout both national and international ever-growing incentives that actively promote mental health awareness (Hartwell, 2015). More so, the World Health Organization (WHO) echoes the global awareness of mental health with policy and legislative statutes that is underpinned by health education and resonated by healthcare professionals all around the world. It is reported that every year 1 in 4 people experience a mental health problem in the UK (O'Reilly & Lester, 2015). Yet, it is still something much of the population that is reluctant to talk about or address. This is especially so within the world of sport as there could be the belief of stigma or indeed some kind of discriminatory attitudes attached to a high calibre sports personality exposing or 'opening up' about their mental health problems. As noted in this study, this has been the case for some high-profile snooker players.

Stigma attached to mental health is associated with 'historical stereotyping' within society (Bauman, 2016; Porter, 2002) and the prominence of stigma attached to sport is ever present, especially within elitist sports such as football or tennis. The association of stigma may be attached to the labelling of the elements of hierarchy and celebrity status of a sportsperson that is possibly viewed by society as some kind of peripheral toughness which in turn hides mental health problems behind a mask of disguise. So inevitably, within the world of sport, it is important to consider the differences between the notion of 'mental toughness' and mental health. Most sports, in fact probably all sports, have an air of 'mental toughness' that surrounds not just the physicality but the cognition of playing a particular sport. For instance, in rugby, the player has an air of physical toughness as in order to play the game but also has a proficient mastery of the rules and playability of the game in order to exhibit 'mental toughness'. Bauman (2016) suggests that there is a distinction between mental toughness and mental health. Bauman further explains this by suggesting that a competitive athlete would be wired with elements of 'hardware' (physiology and biomechanics) and 'software' (mental health and performance psychology). Bauman goes on to suggest that these elements of the whole athlete need to be considered holistically in order to maintain positive mental well-being for any athlete. Using this kind of approach between 'hardware' and 'software' can easily be transferred to the 'everyday player' uses 'software' (concentration and emotion) far more than the 'hardware' (physicality). In turn, by using this approach it would generate more awareness of mental health in snooker because snooker as a game, predominately encompasses the nature of performance and sports psychology.

Encouraging health promotion in snooker

We often associate health promotion in sport with physical demands of playing sports such as football or rugby, but the holistic vision of health promotion in sport extends beyond the physicality of sport. One such example that exhibits the concept and awareness of health promotion is that sport can be engaged in both positive and negative aspects surrounding nutrition. On the one hand, sport can encourage healthy, nutritious eating. In a similar vein, sport can also tackle unhealthy eating and the rise of obesity, especially among children and young people by the introduction of sporting activities as a form of exercise (Department for Culture, Media and Sport, 2012). This kind of examples demonstrates the increasing awareness of the benefits to sporting activities that need to be built increasingly more around health promotion. The most important determinant of health promotion is the emphasis that society generates from its views and values of health promotion. Societal views of health promotion can

be measured by implementing and adapting health promotional models that reflect the different health needs of the communities.

There are numerous varying conceptual health and medical models that reflect the broadness of health promotion but the principality of health promotion is driven by a societal or an individual's own values and judgements that underpin health promotion (Merchant et al., 2007). So, in order to determine a specific definition of health promotion in sport this can be hard to find as well as a little ambiguous. The framework that surrounds a definition of health promotion in sport contains a number of characteristics such as 'physical activity, exercise, leisure experience, physical rehabilitation and physical education' (Merchant et al., 2007). However, an attempt to integrate a definition of health promotion for snooker as sport, and sport in general, would possibly be associated with the following features adapted and applied to snooker from Merchant et al., (2007):

- An engagement of physical or psychomotor skills (*Snooker would lean more towards the psychomotor skills, though there is some physicality involved when playing snooker*).
- Competitive framework (*This is more than likely to be applicable to all sports*).
- Codification of rules that bound movements and activities within clear and stringent parameters (*This would apply to the rules and regulations of snooker, laid out by the governing body of snooker, the WPBSA*).
- Enacted with a predetermined time frame (*This is not applicable to snooker as snooker is not a timed sport*).
- Tradition and or history of past practice (*This is evident from snooker history and snooker's continual development as a sport*).

For the everyday snooker player, one of the most important aspects of health promotion is that the everyday snooker player enjoys playing snooker as playing snooker is both physically and mentally positive and it can also be seen as psychologically beneficial. When it is argued that snooker can be viewed as mentally and physically positive, it is about pointing towards the 'feel good' factor around playing snooker that makes it enjoyable for the everyday snooker player. Merchant et al., (2007) support the idea that participating or undertaking any kind of sporting activity makes an individual feel good. In addition, if sporting activities are taken up by individual that require the need for improving their physical and mental health, then the different kinds of sporting activities are available, such as snooker, should be promoted. However, Merchant et al., (2007) also point out that there are barriers that prevent individuals participating in sporting activities such as social inclusion, economic costs, geographical location, poor physical or mental health and well-being, age and disability, to name just a few.

Lassen's (2014) study of older men playing billiards at an activity centre argues that active ageing policies in Denmark overlook activities that may be considered as a cultural form of social interaction. The emphasis of encouraging active ageing concentrates on physical activity as the centre of old age. Therefore, Lassen's conclude that, 'In billiards activity and passivity are meticulously composed into a rhythm that enables the players to play for hours and produces a collective practise. The article concludes that activity and passivity are entangled and that billiards contains some qualities that could be translated into active ageing policy.'

Lassen's study is encouraging in that it shows a positive outlook and direction for promoting snooker as health promotional activity, not just for the older generation but for all age groups. By all age groups participating in snooker as a sporting activity, hobby or pastime, this may show a development or sustainability of their mental cognition and/or therapeutically support any mental health problems

METHODOLOGY

The data that has been interpreted for this research has been collected by the WPBSA for their research findings into the benefits of snooker is derived from its Snooker Insight Survey. Therefore, the data used and analysed for the purpose of this study is secondary data. The distinctive nature of this research is to conceptualise the secondary research that has already been collected by the WPBSA and this will hopefully serve a purpose to advance the knowledge and awareness around mental health and cognition in snooker. As the purpose of this study is to ascertain whether playing snooker sustains mental cognition and investigate whether playing snooker supports positive mental health. Hence, the use of secondary data analysis methods is advantageous specifically for this study.

The Snooker Insight Survey data is appropriate for this research as it provides a sufficient detail that connects to this research (Hinds, Vogel, & Clarke-Steffen, 1997). The dataset is also significant in that there is no other data or findings to compare the original dataset with. As has already been pointed out, no previous studies have been conducted that explores health in snooker. This may be due to mental health and mental cognition in snooker is not a fundamental area of interest in comparison to the wider implications of health in sport, as a whole. Therefore, it is reasonable to assume that the research question that I have asked can only be answered by secondary data analysis from the original dataset obtained by the WPBSA.

Ethical considerations

All participants in this research have participated in the Snooker Insight Survey carried out in April 2016. The data has been collected solely by WPBSA. The data has been analysed and is considered to be a secondary data, since this study has not carried out any fieldwork to collect primary data. Based on some of the findings of this study, the study may indicate towards further research, through further fieldwork for primary data in the future. In terms of the benefits for participants from this study, this will be ascertained through exploring the health promotional aspects of playing snooker with a view of developing a focus of creating awareness for supporting mental health in snooker as a whole. This study will also serve as evidence-based practice for introducing, with encouragement for the organisations, clubs, professionals, and everyday snooker players – as a supportive sporting activity to all individuals that may have an underlying health or mental health issue.

To justify this research the Chairman of WPBSA and Head of Sports Development at the WPBSA, have both given their consent to this work and is also supported by the Faculty of Health, Social Care and Education at the Anglia Ruskin University.

RESULTS

When asked if all participants actively played snooker, 1,045 responded 'yes' and 306 said 'no'. The gender of participants that responded to the survey were 1,190 males and 161 females. Only 161 participants declared their age range in the Snooker Insight Survey. From these introductory results, it was also found that there were six participants below the age of 16; 28 participants between 16–24; 90 participants between 25–44; 31 participants between 45–64; and, 6 participants between 65–84. This establishes that participants were from a wide age range.

There were a wide range of questions that participants in the Snooker Insight Survey that explored different topics around snooker. These topics ranged from inclusivity and differentiation in snooker especially from the standpoint of women and disability to accessibility to play snooker and questions around the health of individual that participates in playing snooker. For the purpose of this study, analyses were concentrated on the results that correlate to the result question.

1.11 Do you think there needs to be more awareness of the benefits of snooker?

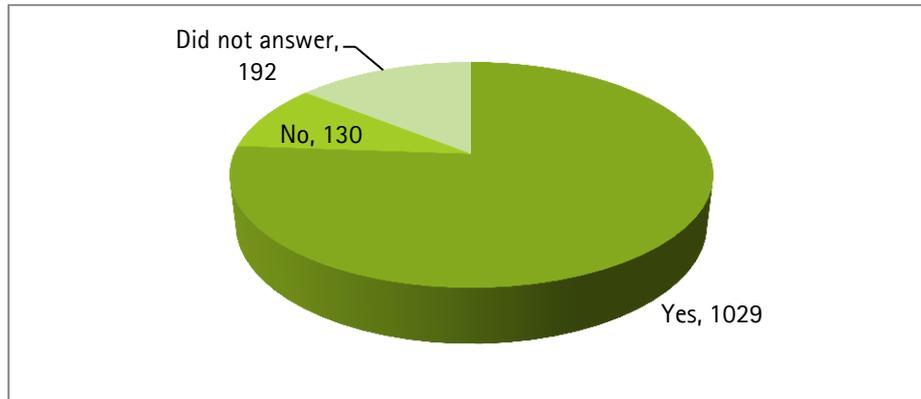


Figure 1. Awareness of the benefits of snooker based on the Snooker Insight Survey

However, when the question that surrounded motivations for playing snooker was asked only one participant responded by stating that ‘mental exercise’ was the motivation and reason for that individual to play snooker. This indicates that mental health/exercise is a domain that may require further exploration in the world of snooker.

The Snooker Insight Survey asked all participants whether there were any health benefits when playing snooker. The answers to the question were based on a holistic view of physical, social, and mental health. The participants had a choice of answers from these three areas or to choose none of the areas indicated in the response. The question asked in the Snooker Insight Survey was:

1.10 Do you feel that playing snooker benefits any of the following aspects of your health?

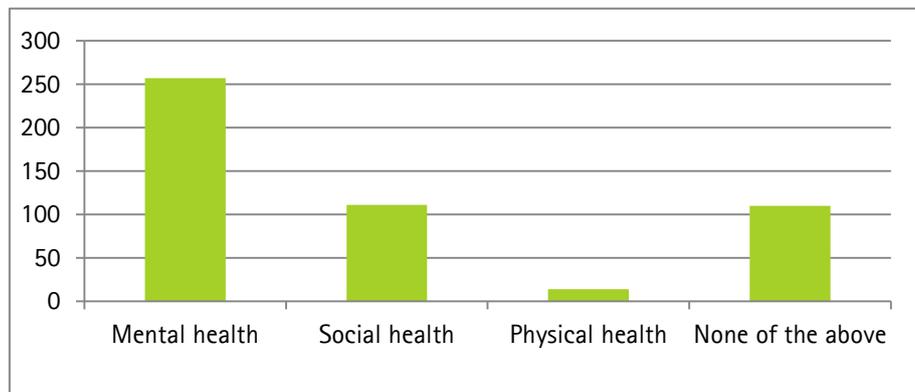


Figure 2. Total number of respondents indicating their specific aspects of health.

The Snooker Insight Survey also asked:

1.14 What are the barriers to playing snooker?

The data extracted from this question had many multiple answers from the participants. So the results have been extrapolated to specific health.

Table 1
 Results that are specific to health

Barriers	Total
Lack of health	28
Lack of hand-eye coordination	1
Right arm amputated	1
Never tried it, physical problem	1

There were a total of 140 participants that answered Question 5.2, of which 39 participants gave multiple answers to the question. The question asked in the Snooker Insight Survey was:

5.2 Which of the following best describes your impairment or illness that affects you?

Table 2
 Impairments of participants based on the Snooker Insight Survey

Impairment or Illness Type	Total
Physical (wheelchair user, movbility issues, amputee, dwarfism)	44
Vision (blindness or visual impairment)	30
Social or behavioural issues (due to neurological diverse conditions such as autism, attention deficity or Asperger syndrome)	42
Mental health problems	25
Learning, concentrating or remembering	19
Hearing (deafness or hard of hearing)	14
Prefer not to say	11
Do not know	4

When participants were asked the Question in 1.12: ‘Do you think playing snooker helps in your day-to-day life?’ the results were a combination of qualitative and quantitative data. Therefore, merging the data has been collected as a form of mixed method research, containing both qualitative and quantitative data will give the research some form of validity and expansion of the breadth of the investigation surrounding mental health in snooker (Driscoll, Appiah-Yeboah, Salib, & Rupert, 2007).

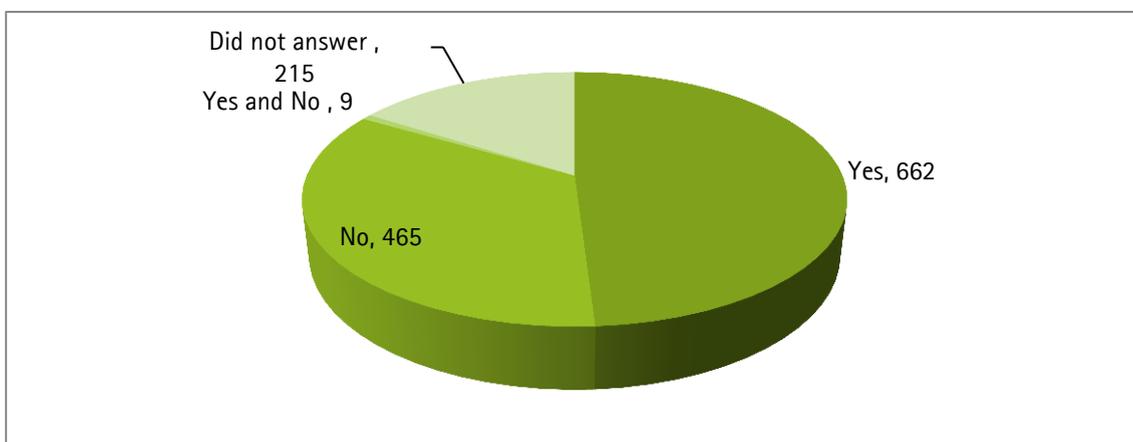


Figure 2. Participants who think that snooker helps in daily life based on the Snooker Insight Survey

There were also a variety of open answers from the same question whereby participants stated that snooker has helped them increase their self-confidence, concentration, maths skills and provided them with the skills for boosting their social interaction with friends. However, the statements that were pertinent to this study was of particular importance are around the topics of health and mental health in snooker. The statements made by the participants specifically centres around mental and health in snooker at it takes prioritisation over the complete date collected (Driscoll et al., 2007). These collative results are explicitly related to Question 1.12.

In order to analyse the qualitative data that was collected from the Snooker Insight Survey, it was important to recognise the patterns of categorisation around the nature of the research questions. Braun and Clarke (2006) suggest a systemic approach to gathering patterns in qualitative data, especially from qualitative data that is concerned with open responses. The advantage to using a thematic approach centres around the flexibility of use in terms of the words, phrases or utterances that are frequently used in the data can be interpreted to from what is 'meaning' or 'meant' through the lens of the researcher (Braun & Clarke, 2006).

On Figure 3, the themes that play significant aspects to the research have been categorised under the following headings: cognitive development, concentration, social well-being, and mental well-being. The qualitative data collected was evidenced with several specific views from participants that commented on health and mental health in snooker. Patton (1990 [as cited in Denzin & Lincoln, 1998]) suggests that the pattern of selection for respondents from secondary data should be 'purposeful' and 'information rich'. So, the following selected comments contribute to emerging themes from a range of participants that serve the research will be examined in the discussion section.

To simplify the results, the chart below illustrates the themes that coincide specifically with the purpose of the research:

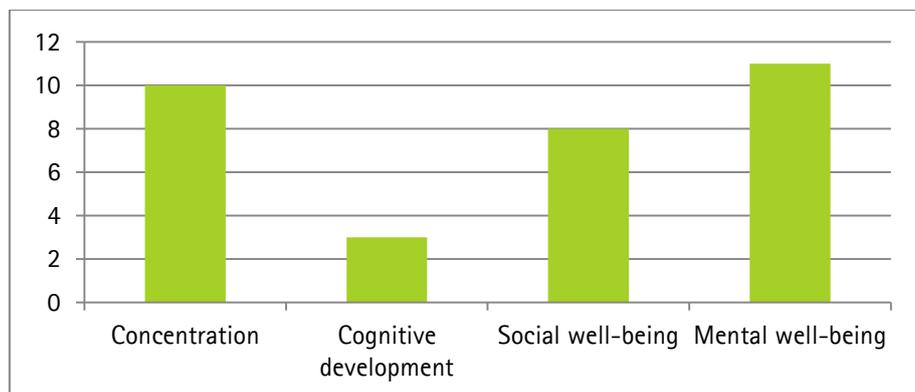


Figure 3. Emerging themes from qualitative responses of participants

DISCUSSION

The secondary data analysis carried out from selected health-related questions of the Snooker Insight Survey that were specific to the study, in its primary findings, shows a variety of aspects of health are linked holistically in relation to playing snooker. The outcomes lend themselves to areas of individual's perceptions of snooker as a whole. Some of the findings concerned with health in snooker point to the barriers that may hinder an individual wanting to play snooker, health impairments that may hamper

an individual wanting to play snooker as well as the benefits of playing snooker and how playing snooker may contribute to an individual's daily living. Although both the qualitative and quantitative secondary data that were analysed support the literary findings, it would be credible to note that secondary data also pose its challenges. These challenges stem from the limitations of the secondary data provided by the WPBSA from the Snooker Insight Survey. One could say that the data is a picture painted by the respondents that is open to interpretation. In this case, it has been specifically targeted the responses that coincide with the purpose of the research question. However, the limited literature surrounding the topic of mental health awareness in snooker as well as the literature around aiming sports and concentration lends itself towards a positive reflection of the need to promote mental health awareness in snooker.

What was particularly apparent was the number of individuals, specifically 257, cited mental health being a barrier that is overcome when pursuing the game of snooker. In fact, the number of people that had cited mental health had commented that playing snooker actually benefited their illness. Some of the comments in relation to a positive outlook to snooker and mental health made by a couple of participants were statements as, *'[Snooker gives] better mental health in their day-to-day life'* and, *'It [snooker] helps me relax, keeps me agile, physically and mentally'*. These findings suggest why it was important for the WPBSA to pursue further angles around mental health associated to the world of snooker, not just for professional but also from the perspective of the 'everyday player'. These outcomes also point to why the goal of promoting mental health awareness in snooker was high on the agenda for the WPBSA. In turn, the results confirm why it was so imperative to sign up to the Mental Health Charter in April 2015. The significance of the awareness of mental health in snooker may also be associated to the individuals that have indicated mental health as a barrier, in the first instance, to playing snooker. However, the results do not suggest this; in fact the results suggest an opposing view that snooker assists with overcoming mental health issues by individuals actually participating actively in snooker.

From the responses of participants in Question 1.12 'Do you think playing snooker helps in your day-to-day life?' it is evident that majority of participants suggested that playing snooker had a positive impact on their daily lives. This optimistic reaction identifies a clear response to the research, and would possibly coincide with the studies carried out by Merchant et al., (2007); supporting the fact that playing sport is about enjoyment. The participants that have indicated that snooker helps in their daily lives may propose that playing snooker makes them happy and that they may enjoy playing snooker or enjoy watching televised snooker matches. In addition, statements made that snooker helps individuals in their daily lives is also noted in the qualitative responses gathered from participants. One such response given by a participant stated that, *'[Snooker] helps to develop a host of mental skills and traits that are used in everyday life, such as concentration, the ability to calculate risk and the importance of being patient'*. Another participant put forward that *'[Snooker] improves brain power and thinking i.e., though thought of next shot, how to escape a snooker can be transferred into problem solving skills in work environment.'* These responses somehow echo suggestions of the existence of a notion of 'snooker pedagogy' in the game of snooker. This is supported by the example of McCormick's (1999) study and by Joe Davis's book of snooker knowledge, *How I Play Snooker* (Davis, 1975) and *Improve Your Snooker* (Davis, 1946).

To assess whether there are any associations between impairment and/or illness to barriers to playing snooker, it is important to consider both the barriers to playing snooker and the health implications noted by the participants that cite what best describes their impairment or illness. From the results of both Questions 5.2 and 1.4, the results identify that a lack of health among the participants in the survey, is cited as the most significant barrier to participants playing or possibly wanting to play snooker. This could coincide with the types of impairment or illness that may affect the participant. Notably from the results to Question 5.2 there are 44 participants that have indicated having a physical impairment.

Thirty participants have indicated some kind of defect with their vision, and as vision play a dominant part in playing snooker, it can be argued that any kind of visual impairment will certainly have an effect on playing snooker. This is also apparent with colour blindness. Many professional players, for instance Mark Williams, Peter Ebdon and Mark Allen have been noted to have a degree of colour blindness. This can sometimes make it difficult to ascertain the difference between the brown ball and red ball in snooker. At times, when the colour of the ball is not distinctively clear, players can ask the referee to the point the colour of the ball. Furthermore, imperfect visual sight can be noted as a slight impediment to playing snooker, hence why the most infamous snooker player to wear specially made spectacles for snooker was Dennis Taylor and Martin Gould is the only other professional snooker player who wears spectacles to play snooker.

Nevertheless, in correlation to the results for Questions 5.12 and 1.14, social and behavioural problems and mental health indicate towards noteworthy results. The classification systems form mental disorders: The International Classification of Diseases (ICD-10) published by the WHO (2004) notes that neurological diverse conditions such as autism spectrum disorder, attention deficit and Asperger syndrome come under the banner of classifications for mental health. This arguably demonstrates that mental health and social or behavioural issues that are indicated in the survey could be an indication of results that are a broad interpretation of mental health as a whole. It would be useful for further research to be explored into the association of mental health and snooker, by pointing towards the common types of mental health issues that could possibly affect individuals that play snooker e.g., stress, anxiety or depression. Another assertion can be made from the results of Question 1.12, which deals about the issues around mental health that can be supported by playing snooker, as many participants; in fact 662 have indicated that playing snooker is helpful in their daily lives. Again, by exploring this question further, this was able to find what kinds of activities in daily life snooker assists with and helps to overcome for the individual. Although in some respect, some participants have stated their view of how snooker assists with their mental health, one participant stated, *'It gives me a [good/positive] mental health. Additionally, while I play snooker, I relax.'* Another respondent validated the notion that snooker can induce positive mental health by saying, *'playing snooker, it helps to better mental strength, which entails in somebody being in better mental health in their day-to-day life.'* The comments made by participants help to establish the suggestion that snooker can be seen to be positive for mental health. It can be argued that positive mental health can have an impact dependent on the individual, but the results that were analysed from the Snooker Insight Survey leans toward the belief that snooker can play a part in promoting positive mental health.

The theme of concentration as part of health in snooker also plays a substantial component in the results that have been obtained from the Snooker Insight Survey. The survey results propose that concentration of the mind when playing snooker constitutes to positive mental health and well-being. This is noted from the participants of the survey who say that playing snooker can *'strengthen your concentration, boost endurance, [and] better your self-control.'* Another participant went on to say *'playing snooker benefits somebody's concentration levels, so by playing snooker someone's concentration levels are better in their day-to-day life.'* Adding to this, another participant voice that, *'It [Snooker] helps my concentration very much.'* These clarifications point towards Moran's (2004) ideas of concentration in sport, and its importance in playing any kind of sport. It is evident to see Moran's (2004) propositions come into fruition in snooker, as the game of snooker requires an overall need for concentrating the mind when laying and thinking about the next shot to play, or what kind of shot the opponent may play. Concentration in snooker also plays a fundamental role in snooker pedagogy, for example, the sequence of shots that may be played to accumulate a 'break'; or the series of shots needed to play the game. An example of this is at the latter part of the game whereby the coloured balls need to be potted into the pockets of the snooker table in the order that is subscribed by the rules of snooker. Further findings from the quantifiable illustration of comments from participants in Figure 2, it is clear to

see that there is formidable positive attitude snooker benefiting and individual's mental concentration, their overall sense of social well-being, and, most importantly, their mental well-being.

The findings of the Snooker Insight Survey has helped to verify that snooker can have an encouraging bearing on an individual's mental health and well-being in quite a holistic way. In order to come to a conclusion, it would be good to summarise the findings of this study and make certain recommendations regarding factors that may influence further research around mental health and snooker. The goal of this study was to explore and describe factors that contribute to generating an awareness of mental health in snooker, as well as provide a reflection of factors that underpin cognition in snooker. This study has certainly signposted and directed the game of snooker towards the idea that snooker is able to attribute to an actual sense of 'good health and well-being'.

CONCLUSION

This explorative investigation has clearly outlined that when individuals play snooker, the game of snooker plays a vital role in maintaining or indeed developing cognitive function. It is also clear to see from the secondary analysis from the Snooker Insight Survey provided by the WPBSA that snooker has addressed some of the outlines of the Mental Health Charter by promoting the individuals' well-being, addressing it through a positive approach to mean health practice, tackling any form of discriminatory practice by generating awareness of mental health in snooker, and by the WPBSA, collaborating alongside in this research, and from the study's initial findings, this enables the WPBSA to make a start in taking positive steps in mental health issues around the world in snooker.

This study recommends that further research that coincides with the benefits of playing snooker and how this can be applied as an activity for daily living. Bearing in mind that this is the only study conducted that specifically explored a broad definition of health in snooker, it would be beneficial for the 'everyday snooker player' and the WPBSA to take one step further and consider specific topics of research from the findings of the Snooker Insight Survey. In terms of the future implications, the door is now open for the possibilities of extending the ethos of academic research as a joint venture with WPBSA and other organisations to investigate a breadth of issues, topics that can be bale to relate to a scope of possibilities in health and social care. Lastly, snooker pedagogy can now be considered as an intellectual or academic sport, rather than just a sport.

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