GRENFELL CAMPUS | MEMORIAL UNIVERSITY

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Psych 4950

"Don't become a mere recorder of facts, but try to penetrate the mystery of their origin."

- Ivan Pavlov

Psychology Program

Grenfell Campus

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The capstone course, Psychology 4950, in the Bachelor of Arts and Bachelor of Science psychology degree programs allows students to carry out research on a topic of their choice and to prepare reports on their findings. This compilation of papers represents the results of their efforts.

The faculty and staff of the Psychology Program congratulate the members of the Year 2014 course on their accomplishment, and wish them continued success.

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The Study of Studying – Using Cognitive Strategies to Improve Grades

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Introduction

Human memory is an interesting topic and one that has been extensively studied leading to many different theories about how memories are formed and the process and location for the storage of memories. Of particular relevance for students are the processes of how memories are formed and the cognitive strategies that would increase the memory trace. An understanding of how memories are formed might improve memory and knowing ways to better remember information could be manipulated to apply to studying strategies. If students could train themselves, and their brains, to form more detailed and durable memories, they could immediately increase their performance on examinations and likely increase output after their university careers. Prior to any specific discussion about the formation, and subsequent retention, of memories and the potential enhancement of both, a general understanding working memory and long term memory, is essential. Working memory, commonly referred to as short-term memory, is responsible for stimuli that are currently being processed (Matlin, 2005). Long-term memory refers to our durable, biographical and factual memories of our lives and life experiences. This memory store is thought to be unlimited in capacity and can be broken down into three sub-types: episodic, semantic, and procedural. Episodic memory refers to memories you have about your own experiences, the episodes of your life while semantic memory refers to knowledge of facts, words, and general knowledge about the world. Finally, procedural memory contains information on processes behind events, such as riding a bicycle or tying your shoes (Matlin, 2005).

Although the working memory and long-term memory systems are fairly easy to theoretically understand, to practically apply these concepts to a student's benefit will require a deeper understanding of the cognitive processes involved in this dynamic and complex area. In particular, the understanding and application of the levels of processing theory, encoding principles and strategies, and the effects of context-dependent memory. The upcoming sections will examine each of these areas in turn and will attempt to apply this information, wherever possible, to a strategy that would improve the academic performance of your average university student.

Levels of Processing

Although there are a number of general theories relating to memory, for the purposes of this study, the levels of processing approach will be adopted as the basic approach to memory. This approach suggests that the processes of cognition vary on a continuum and within the levels of processing framework there are different depths of processing: shallow, intermediate, and deep. In shallow processing, structural encoding occurs where the physical structure of the stimulus is the primary focus. In intermediate processing, phonemic encoding dominates where the emphasis is on the sound of the word, for example, thinking of another word that it rhymes with. For deep processing, semantic encoding, which accentuates the semantic meaning behind

the word, is usually necessary (Benjafield, Smilek, & Kingstone, 2010). Additionally, the levels of processing approach puts emphasis on distinctiveness and elaboration with distinctiveness referring to the specific way a stimulus is encoded while elaboration refers to the degree to which the stimulus was processed, in regards to shallow, intermediate, or deep levels of processing. The general consensus is that the more distinctively a stimulus is encoded and the more elaborately the stimulus is encoded, the better it will be remembered (Benjafield, Smilek, & Kingstone, 2010).

Craik and Tulving (1975) describe the episodic memory trace as a byproduct that occurs automatically and without awareness during cognitive processing. According to Craik and Tulving (1975) the durability of the trace depends on the depth of processing, with depth referring to increased increments of semantic involvement . Craik and Tulving (1975) tested this notion and others via ten experiments that aimed to explore the levels of processing approach to memory. These ten experiments paid specific attention to the role of rehearsal, attention, encoding, and retrieval in regards to processing depth (Craik & Tulving, 1975).

In their first experiment, Craik and Tulving (1975) administered a perceptual-reaction time test. The perceptual-reaction time test consisted of an encoding phase and a recognition phase. Participants were shown a series of words and asked five questions about the word that initiated different levels of encoding. The questions, in order of ascending levels of elaboration, inquired about the presence of a word, whether or not the word was in capital letters, rhyming, the category of the word, and the final question was if the word would fit in a particular sentence. After the questions, the participants were given a list of forty words from the original word list and forty distracter words. Participants were then asked to choose the words from this list that had been presented to them (Craik & Tulving, 1975). The first experiment yielded results that suggested that higher levels of retention were achieved through deeper, semantic levels of processing. Participants responded more quickly to questions about the structural form of a word than when they answered deeper abstract questions about the word and its meaning. Given that the questions about the words' meanings took longer to answer, it was assumed that they were processed in a deeper manner. Indeed, it was found that the words involved in the semantic questions had a higher level of recognition (Craik and Tulving, 1975).

In their second experiment, Craik and Tulving (1975) used only three of the questions used in experiment one to measure levels of encoding; a question about whether the word was in capital letters or not, a question about rhyme, and a question of whether the word would fit into a particular sentence. The second experiment replicated the results of the first experiment, again suggesting that a deeper level of analysis is achieved when semantic qualities of words were considered thus leading to increased levels of recognition (Craik & Tulving, 1975).

The three levels of encoding that were used in experiments one and two were used again in experiment three; a question about the case of the letters, rhyming, and a sentence question. The participant was asked one of the three questions and then the word was presented. The participant then indicated their answer to the question. After the question and answer round was over the participants were given an unexpected recall test (Craik & Tulving, 1975). In this experiment, Craik and Tulving (1975) found evidence that suggested that more time is needed to produce a deeper level of encoding. They did not find differences between encoding times for questions with a yes or no response. However, Craik and Tulving (1975) did find that recall was increased with questions requiring a yes answer compared to a no answer. Additionally, it is noted that these findings apply to recognition as well as recall (Craik & Tulving, 1975). Experiment four was essentially a replication of experiment three, except that this recall test was

expected by the participants. The results of experiment four further support the results of experiment three; retention was increased when semantic questions were asked about the word being presented. This applies to recall and recognition as well (Craik & Tulving, 1975).

Experiments one through four studied the impact of different depths of processing in regards to semantic versus structural encoding processes. In experiment five, Craik and Tulving (1975) studied the effect of the length of time it takes to encode. The experiment consisted of a semantic task that was easy to perform and thus would take a short amount of time to perform, and a non-semantic task that was difficult to perform and therefore would take longer to perform. Thus it was hypothesized that the shorter semantic task would produce increased performance in memory, because the semantic task would produce a deeper level of encoding than the non-semantic task even though the time it took to do the task was longer. (Craik & Tulving, 1975). Craik and Tulving (1975) hypothesized that the length of encoding time was less important to memory durability than the level of encoding. The results of experiment five supported these hypothesesleading to the conclusion that it is indeed the type of task and depth of processing rather than the processing time that has the most impact on memory.

In experiment nine, 60 words were projected on the screen and participants were asked questions about the words. The questions related to category, case and rhyme. For example, if the word was copper, the subject may have been asked one of the following three questions: Does the word rhyme with stopper? Is the word a fruit?, or Is the word a metal? (Craik & Tulving, 1975). Participants then had to answer the question with a yes or no answer. After this, participants were given a list of 180 words and asked to identify 60 of them as belonging to the primary list. The results of experiment nine suggested, as did the results of experiment five, that increased presentation time of a stimulus did not equate with better recognition. Additionally, the results of experiment nine provided evidence for the notion that the encoding process was more integral to remembering than was processing time (Craik & Tulving, 1975).

What the evidence of Craik and Tulving's (1975) studies suggested is that degree to which a stimulus is encoded is indeed predictive of the durability of memory. It was even shown that less time spent on a stimuli that is deeply encoded is more beneficial than spending more time on stimuli that will only be encoded to a shallow degree (Craik & Tulving, 1975). According to levels of processing theory, the degree to which a stimulus is encoded is important for memory durability. The type of encoding is also important to memory durability, and the way that something is encoded, not just the degree to which it is, impacts memory durability.

Encoding

It can easily be seen, through the levels of processing framework, that encoding plays a very important role in the formation of memories and the remembering of particular stimulus. Encoding is not automatic and there are many different strategies of encoding, and ways to improve these strategies, to increase the formation, duration, and accessibility of memories.

According to Benjafield, Smilek, and Kingstone (2010), encoding is a procedure whereby information is converted to one or more forms of representations, transforming a stimulus into a durable memory. Typically encoding is an unconscious process although it can be made a conscious process by applying several techniques to create more accurate memory representations.

Markopoulos, Rutherford, Cairns and Green (2010) discuss two types of encoding in regards to associative memory (i.e., forming a combined memory of two stimuli). In item-

specific memory the features of the items are encoded separately while in relational memory the focus remains on the common features of the stimuli and meaningful associations between the stimuli are created based on these shared features.

Murray and Kensinger (2012) explored the impact of emotion and the integration versus non-integration of words on remembering. Integration is another strategy that can be employed at encoding to improve memory and it refers to the combining or integrating of two separate entities into one. For example, the integration of the words degree and surf might have someone imagine themselves using their degree as a surfboard. To test the suggestion that the presence of emotion can increase the strength of integrative bonds, Murray and Kensinger (2012) presented participants with a neutral word that was paired with either another neutral word or an emotional word, and they were then instructed to use either an integrated or non-integrated encoding strategyIn both the first and second experiments by Murray and Kensinger (2012), participants were given 60 pairs of words and were instructed to either apply a non-integrative imagery strategy or an integrative imagery strategy. The 60 word pairs consisted of pairs of positive, negative, or neutral stimuli. Participants then engaged in two tests, associative cued recall and item recognition. The only difference between experiments one and two was the omission of valence judgments, that is, asking the participant to indicate whether a stimulus was paired with a neutral, positive or negative item (Murray & Kensinger, 2012).

The results of experiment one supported the hypothesis that employing strategies of integration bettered remembering. Non-integrative strategies facilitated better item recognition and integration facilitated associative memory. Recognition of single items improved when a non-integrative strategy was employed. If words were presented as pairs, recognition of the pairs was improved when studied with an integration strategy (Murray & Kensinger, 2012). Murray and Kensinger (2012) did however note that integration was affected by the emotional or neutral nature of the words but the benefit was small was and only produced spurious improvements. In a second experiment, Murray and Kensinger (2012) found that integrating neutral and emotional words took less time and required less than did integrating two neutral items. This increased time spent on integration was thought to form a more elaborate memory trace although these results contrast with the results of Craik and Tulving's (1975) series of experiments that found evidence that supported the encoding process rather than processing time as a determinant of memory performance. This discrepancy could be due to procedural differences in the studies since Craik and Tulving (1975) had participants engage in tasks regarding the presented stimuli and Murray and Kensinger (2012) used presentations of single words and word pairs.

The results of the aforementioned studies suggest that there are different encoding processes available for the formation of memories and associations but is it possible to manipulate these different encoding processes to use them to an academic advantage? Finley and Benjamin (2012) examined encoding strategies and the extent to which these strategies could be used successfully in learners with particular focus on undergraduate student (Finley & Benjamin, 2012) .

In three experiments, Finley and Benjamin (2012) explored encoding strategies, their effectiveness, and the ability of undergraduate students to employ the strategies. In experiment one, participants were presented with word pairs and were given a type of test afterwards. There were four possible tests that could be given to participants: expected and received cued recall, expected cued recall and received free recall, expected free recall and received cued recall, and expected and received free recall. After participants completed five tests, they were asked to self-report on their encoding strategy (Finley & Benjamin, 2012). Experiment two was a replica of

experiment one with the exception of a fifth test, judgments of learning for each presented item and the absence of unexpected tests.

The results of experiments one and two suggested that students could successfully tailor their encoding strategies to fit the anticipated test type. The evidence also suggested that those who knew which type of test to expect had superior performance over those who did not know which type of test to expect. Additionally, experiment two provided evidence that suggested that when students had more practice and experience manipulating their encoding strategies they could better use encoding strategies to enhance performance and increase the durability of their memory traces (Finley & Benjamin, 2012).

In their third experiment, Finley & Benjamin (2012) examined the hypothesis that similar patterns to those observed in experiments one and two would be observed on responses to questionnaires, recall tasks, and associative recognition tasks. It was additionally hypothesized that differential amounts of study time would produce differences between the demands of tasks of cued tests, particularly differentiating between unrelated and related pairs, and free recall tests. Students were given six different tests that fell under one of two categories, however, only four will were examined for the purpose of this study. Across levels of two variables expected test format (cued recall vs. free recall), and word pair associative strength (related vs. unrelated) (Finley & Benjamin, 2012) four tests were generated and subsequently completed by the participants. The results suggested that students can employ encoding strategies and that the ability to employ them increases with experience in studying and testing (Finley & Benjamin, 2012).

The studies conducted by Maropoulos et. al. (2010), Murray and Kensinger (2012), and Finley and Benjamin (2012) provide evidence for the importance of encoding and different strategies of encoding. As it can be seen in the aforementioned studies, how a stimulus is encoded is can be a determinant of memory performance. The how is important in encoding, and so is the where, as is suggested by principles of context-dependent memory.

Context-Dependent Memory

Theories of context-dependent memory state that if the encoding context and retrieval context are similar then recall of information is facilitated. Conversely, if the encoding and retrieval context are vastly different, recall rates decrease and rates of forgetting increase (Matlin, 2005). Context has been defined, by Murnane and Phelps (1993), as any non-stimulus related information that is present during the time of encoding. For example, the color of the paper a list of to-be-remembered words is written on. The interesting question becomes whether or not context dependent memory effects can influence the performance of your typical undergraduate student when writing, and therefore studying, for a test.   Environmental context effects refer to the effects that the encoding environment have on the ability to create associations between pairs of stimuli. These effects have been studied using an environmental context reinstatement procedure where both the context at encoding and retrieval are manipulated. The presence of a performance interaction between encoding and retrieval contexts is suggestive of a context dependent memory effect (Markopoulos et al., 2010).

Markopoulos et al. (2010) describe two different types of environmental context which they refer to as local and global contexts. A local environmental context refers to anything that is in close proximity to the stimulus, think in terms of foreground color, or other words surrounding the stimulus. Global environmental context, on the other hand, refers to the space in which

encoding occurs, for example, a particular location. In addition, local and global environmental contexts can be further differentiated in terms of what surrounds the stimulus. Global context surrounds both the person and the stimuli while local context surrounds only the stimuli itself (Markopoulos et al., 2010).

In Markopoulos et al.'s (2010) first experiment, it was hypothesized that more inter-item associations would be made in single-item presentations than in word-pair presentations, and that when word-pairs were presented more associations would be made between the words themselves as opposed to associations between separate pairs of words. Experiment one used words that described natural stimuli (e.g.., rainbow) and words that described man made stimuli (e.g., a car) words for memorization and subsequent testing with participants asked to indicate whether the word presented was man made or natural. Experiment two replicated experiment one with the addition of employing an environmental context manipulation in order to study the effect of context by using different four combinations of background and font colors on the computer screens that the stimuli were being presented on, assigned randomly to participants(Markopoulos et al., 2012).

No evidence was found in experiment one to support the hypothesis that more associations would be produced with single item presentations than word pair presentations. As for the second hypothesis, there were no differences of association between the natural and man made conditions (Markopoulos et al, 2012). Markopoulos et al., (2012) suggested that this was due to the emphasis on the individual semantics of each stimulus and thus they are encoded individually.

The results of experiment two yielded a higher proportion correct in the same environmental context than a different environmental context. The memorization task, which consisted of memorizing single words or word pairs that appeared on a screen, had lower sensitivity for encoding than did the man made versus natural task. This difference in sensitivity shows that there are more benefits to memory when item-specific encoding is employed. (Markopoulos et al., 2012).

Murnane and Phelps (1993) conducted three experiments in order to determine the role of environmental context on recall. Across the three experiments, environmental context was operationalized as a composite of the location of the stimulus and the colors of the screen (Murnane & Phelps, 1993). Experiment one was designed to test theories of context dependent memory. Specifically it was hypothesized that hit rates and false alarm rates would decrease when context for recall was different compared to the encoding context. Hit rates refer to identifying that one has seen the stimulus before, and they are right. False alarm rates refer to when a participant says they have seen the stimulus before when in reality they have not. Thus, if hit rates decrease, this would be negative. If false alarm rates decrease, this would be beneficial. It was also hypothesized in experiment one that mental reinstatement would be an effective tool to increase recognition (Murnane & Phelps, 1993). Mental reinstatement refers to imagining the original learned context in order to aid recall. Experiment two replicated experiment one with the one difference being that the participants were told that they could use mental reinstatement as a remembering technique. Finally, in experiment three, using mental reinstatement was suggested after the participants had learned a list of words in order to determine if the effects mental reinstatement was merely a function of being applied at encoding (Murnane & Phelps, 1993).

The results of experiment one suggested there was no effect of mental reinstatement. It is possible that no effect was found because participants were unaware of mental reinstatement since there was no evidence that they did in fact employ this technique. The hypothesis that

recognition is impacted by changes in the environmental context was supported. The results of experiment two replicated the results of experiment one insofar that environmental context has an effect on recognition. No main effect was discovered in regards to the number of different contexts. Experiment three replicated the results of experiment one and two again, insofar that effects of different contexts were observed in recognition tasks.

Both Markopoulos et al. (2012) and Murnane and Phelps (2012) have shown evidence in support of context-dependent memory, the context experienced during encoding and testing has an effect on a person's ability to recall and score well on a recognition test.

Conclusion

Students can use the evidence from the studies by Craik and Lockhart (1975), Markopoulos et. al., (2010), Murray and Kensinger (2012), Finley and Benjamin (2012),and Murnane and Phelps (1993) to produce strategies that can be beneficial to their studies, and thus overall grades. The question then becomes, how can students turn the results of these studies into studying strategies? How can they be applied to undergraduate course work?

Given that there is evidence to support the notion that the level to which a stimulus is processed is a direct function of memory (Craik & Tulving, 1975), students should attempt to process their course material to the deepest degree they possibly can. Instead of simply reading course notes over and over in an attempt to memorize the material, students should spend more time applying meaning to the notes. Students can associate course materials with their own personal experiences. For example, a student who is taking a psychology course and learning about classical conditioning. The student may think of the time they ate tacos when they had the stomach flu, and now the smell of tacos makes them urge. Associating classical conditioning with a personal experience encodes the stimulus to a deeper degree than if the student just tried to memorize the notes given on classical conditioning. Additionally, students can achieve a deep level of encoding if they write the notes out in their own words, or flesh them out with information from the textbook. This would allow students to encode the information to at least an intermediate level.

Students can manipulate encoding strategies to ensure the durability of their memories. Murray and Kensinger (2012) found evidence to support integration as an effective encoding strategy. Associating course materials based on their common characteristics may be a strategy students can use in encoding to facilitate better remembering. Murray and Kensinger (2012) found an additional strategy that facilitates encoding, the application of emotion. Students who associate a particular emotion with course materials will remember the materials better than students who do not. As Finley and Benjamin (2012) indicate in their study, it is certainly possible for students to use encoding strategies to their advantage effectively.

Context-dependent memory strategies can certainly be manipulated by students to facilitate better memory. As Markopoulos et. al. (2010) and Murnane and Phelps (1993) demonstrated in their work, the context in which a student learns is essential to remembering when being tested. Students should study in an empty classroom, in the library, or somewhere else on their universities campus instead of studying at home. A student's home is a vastly different context from a classroom. Therefore, if students study in a similar context to their classroom, such as the library, it will give them an.

Additionally, it is common for many students to watch television or listen to music while they study. This creates a different context for encoding than the context for testing. Students

will encode in a noisy environment and associate the material with sounds or a melody of a song. Conversely, when students are tested, they will be in a relatively silent environment. This creates two different contexts between encoding and retrieval, which can be problematic for remembering. Students should study in a quiet environment since this is the environment they will be tested in.

It is not only important to learn and use the strategies themselves, but for students to learn the strategies early in their studying careers. I think that students should be taught these strategies upon entering an undergraduate institution and beginning their academic careers. Utilizing these strategies to be as beneficial as possible takes time and practice. The longer students use them they better they will get at using them to their advantage, especially in their third and fourth years of study when course loads increase.

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Educate Yourself: Exploring Stigma against Schizophrenia

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Abstract

The purpose of this study is to examine whether the presence of a label of schizophrenia impacts perception. One hundred and eighty-seven participants completed a survey package, with the majority being affiliated with Grenfell Campus, Memorial University of Newfoundland (121 students, 13 faculty, 19 staff, 24 not affiliated with MUN, and 10 who did not indicate their position),consisting of one of two vignettes (one with the label of schizophrenia, one without a label), a questionnaire consisted of opinion/knowledge based questions, and a debriefing/educational section consisting of the correct responses to the knowledge questionnaire, as well as a description and list of symptoms associated with schizophrenia. It was hypothesized that participants who received the vignette including the label of schizophrenia would have a more negative perception than those with the absence of a label. Furthermore, it was hypothesized that participants possessing knowledge of schizophrenia would have less negative perception scores. Finally, it was theorized that participants who knew someone diagnosed with schizophrenia would have less negative perception scores. It was found that the presence of the label of schizophrenia had no significant effect on perception scores. However, the more knowledge a participant possessed about schizophrenia, the more positive their perception. Limitations of the study include a small sample size. Further research would be beneficial in reducing stigmatization against individuals diagnosed with a mental illness.

Perceptions of Mental Illness: A Closer Look at Schizophrenia

The term 'stigma' was defined and popularized in the social sciences by Erving Goffman (1963), who used it to refer to an attribute that is deeply discrediting or something that sets one apart from being considered normal. In other words, it is a mark or label that is placed upon an individual that separates them from the general population. Although societal reactions to some attributes show substantial variation across time and culture, mental illness has remained associated with a severe stigma that is universal and much less dependent on cultural contingencies or opinions (Switaj, Wciorka, Grygiel, Smolarsk-Switaj, Anczewska, Grzesik, 2011).

Such stigmatizations can have severe consequences for individuals diagnosed with a mental illness including negative impacts on things such as obtaining housing and employment, self-esteem, and quality of interpersonal relationships to just name a few (Haqanee et al., 2014). Furthermore, individuals who have been diagnosed with a mental illness often anticipate stigmatization to reduce their self-esteem, increase demoralization, isolation and depressiveness, as well as reduce social relationships (Angermeyer, Beck, Dietrich, Holzinger, 2004). This is likely to lead to self-stigmatization, where individuals diagnosed with a mental illness internalize negative attitudes towards themselves and others who have been diagnosed with a mental illness (Boyd, Katz, Link, & Phelan, 2010). When this internalization of stigmatization occurs, those labeled as having a mental illness become reluctant to seek or remain in therapy, which in turn encourages stigmatization when the lack of treatment is reflected in the individuals' behaviors

(Boyd et al., 2010). However, it has been suggested that sometimes individuals who have been diagnosed with a mental illness anticipate stigmatization more often than they actually experience stigmatization (Angermeyer et al., 2004). Using a sample of 105 participants (55 who had experienced a depressive episode, and 50 individuals diagnosed with schizophrenia), Angermeyer et al. (2004) attempted to elucidate the potential reasons why individuals with a mental illness are stigmatized. They found that 65% of the patients stated that stigmatization could be partly due to the media portraying mentally ill individuals as murderers or violent criminals, and 65% of patients also anticipated stigmatization in the context of interpersonal interaction in the form of rejection or avoidance. The majority of the patients also reported having experienced rejection or avoidance, as well as having friends and family members break contact with them because of the illness (Angermeyer et al., 2004).

It is the purpose of this study to examine the influence of various labels and stigma associated with individuals diagnosed with schizophrenia. Specifically, this study looks at perceptions of individuals diagnosed with schizophrenia who are experiencing a psychotic break in a public setting and whether the presence of the schizophrenia label has any effect on perception scores. Furthermore, the present study is also interested in determining whether perception scores are affected by the knowledge the participant has about schizophrenia. In other words, does the amount of knowledge a participant has of the disorder effect the way the participant perceives individuals diagnosed with schizophrenia.

Perceptions of Schizophrenia: Perceived Dangerousness and Social Distancing

It has been noted that individuals diagnosed with schizophrenia almost always report experiencing stigmatization more frequently and more intensely than patients with other mental illnesses (Angermeyer et al., 2004). There are many contributing factors to this stigmatization including emotional factors, such as feeling blame or anger towards mentally ill individuals; cognitive aspects, such as perceived dangerousness and violence; and behavioral aspects such as social distancing (Angermeyer et al., 2004). Social distancing is a measure of ostracism that includes reluctance to make friends with someone or to allow someone to join a group, based upon a mental illness (Boyd et al., 2010). In a study conducted by Couture and Penn (2003), 70% of participants reported viewing individuals who have been diagnosed with schizophrenia as dangerous, 80% reported seeing said individuals as unpredictable, and over half thought it would be difficult to create and maintain a conversation with an individual who has been diagnosed with schizophrenia. Similarly, Crisp, Gelder, Rix, Meltzer and Rowlands (2000) found that of seven disorders (i.e., depression, panic attacks, schizophrenia, dementia, eating disorders, alcoholism and drug addiction), schizophrenia received the highest reports of perceived dangerousness. Furthermore, another study compared data from 1996 and 2006 to examine the relationship between the desire for social distance from individuals diagnosed with a mental illness and a number of factors that were thought to contribute to it, such as perceived dangerousness (Silton, Flennelly, Milstein, & Vaaler, 2011). The participants at each time point were assigned to 1 of 4 vignettes in which they were presented with a character facing alcoholism, depression, schizophrenia, or a "minor problem" in which the character did not meet the criteria for any psychiatric diagnosis (Silton et al., 2011). Data from 2006 suggested that there has been a reduction in the desire for social distance from individuals who have been diagnosed with the illnesses presented, with the exception of schizophrenia, which reported a higher desire for social distance in 2006 than in 1996 (Silton et al., 2011). Another group of researchers then compared mental disorders (i.e., schizophrenia and alcoholism) with a somatic

disorder (i.e., Parkinson's disease) where it was hypothesized that stigmatization and the desire for social distancing would occur more often with individuals diagnosed with a mental illness than individuals with a somatic disorder (Haqanee et al., 2014). In support of this hypothesis, the desire for social distancing occurred more often with individuals diagnosed with a mental illness than those with a somatic disorder (Haqanee et al., 2014). Also noted was that individuals with a mental illness were reported as being more likely to act dangerously and violently, as well as being highly unpredictable (Haqanee et al., 2014). Furthermore, Haqanee and colleagues (2014) found that when participants were asked questions comparing alcoholism to schizophrenia, they reported believing that symptoms of schizophrenia were more reflective of a mental illness than symptoms of alcoholism.

Strategies to Reduce Stigmatization

Several strategies exist that could contribute to lowering stigmatization against individuals diagnosed with a mental illness. The most promising strategy was proposed by Allport (1954) who suggested that engaging in interactions with members of any negatively evaluated group results in an increased liking for those people. This effect then expands and generalizes, leading to more positive attitudes toward that group as a whole, as well as encouraging friends and family members to also adopt a positive attitude. Similarly, Couture and Penn (2003) also suggested that promoting contact was likely to be the most promising strategy because it combines both education and the opportunity to directly interact with someone who has been diagnosed with a mental illness. Similarly, it has been found that participants who reported previous contact with someone with a mental illness were significantly less likely to fear them, think of them as dangerous, and were less likely to desire social (Corrigan, Edwards, Green, Diwan, & Penn, 2001). Crisp et al. (2000) also found that participants who knew someone with a mental illness and engaged in contact with that individual were less likely to perceive that person as dangerous, especially in cases where the individual was diagnosed with schizophrenia.

Another important strategy is to provide information about mental illness in educational settings. One study found that stigmatizing attitudes of mentally ill individuals was just as frequent in adolescents as in middle-aged people, suggesting that informational presentations could expand adolescents' knowledge of various mental illnesses and lower the chance of stigma (Crisp et al., 2000).

A third strategy for reducing stigmatization is stigma self-management, which encourages the empowerment and support of people diagnosed with a mental illness (Arboleda-Florez & Stuart, 2012). The purpose of this strategy is to help individuals diagnosed with a mental illness to overcome their illness identities and move beyond the illness to find new personal meanings in their lives (Arboleda-Florez & Stuart, 2012).

Stigma in Canada

Canadian research has suggested that the quality of life of individuals with psychiatric disorders depends largely on the severity of the illness, as well as their level of integration and acceptance in the community (Buizza, Schulze, Bertocchi, Rossi, Ghilardi & Pioli, 2007). Oleniuk, Duncan and Tempier (2013) conducted a cross-sectional survey examining the amount of stigma experienced by individuals diagnosed with a mental illness, specifically, the level of acceptance experienced. Hospitalized patients (n = 41) were recruited from two psychiatric care units were interviewed and then placed into one of three categories depending on their illness

(i.e., schizophrenia, bipolar disorder, and unipolar depressive/affective disorder). A questionnaire was administered consisting of 40 items that assessed the perceived level of integration and acceptance the patients experienced (Oleniuk et al., 2013). Almost all participants reported stigma experiences and expressed worry about being viewed unfavorably and being avoided by members of the public (Oleniuk et al., 2013). Participants also reported feeling discredited due to their illness, which led to a lower quality of life (Oleniuk et al., 2013). Oleniuk et al. (2013) noted that most participants spoke very openly about their experiences with stigma and hoped that sharing their experiences would limit future stigmatization against individuals with mental illness.

Another Canadian study revealed that mental health professionals are often rated as being among the most stigmatizing people by individuals who seek mental health services (Arboleda-Florez & Stuart, 2012). Participants reported feeling punished, patronized, embarrassed, belittled, inferior, and incapable of making treatment decisions by mental health professionals (Arboleda-Florez & Stuart, 2012). Furthermore, participants reported having felt stigmatized by mental health professionals perceived lack of interest in them as a person, the prognostic negativity with which their diagnoses were given, and carelessness of using medications that had social implications for the mentally ill individuals (i.e., weight gain) that made them feel uncomfortable during social interactions, as well as reduced their self-esteem (Arboleda-Florez & Stuart, 2012).

The Present Study

The present study examined stigmas present concerning individuals who have been diagnosed with schizophrenia. More specifically, the study looked at labeling differences as well as how knowledge of the disorder influences perceptions of individuals facing this mental illness.

It was the purpose of this study to examine what stigmas still exist and whether those stigmas are partially due to a lack of knowledge. It is important to acknowledge that strategies must be put in place to increase knowledge of mental illness in general, specifically schizophrenia, as it as often associated with dangerousness and violence, which leads to greater social distancing from individuals diagnosed with schizophrenia. The results of this study are intended to reveal that stigma is still a prevalent issue in society, and steps must be taken to reduce stigmatization against individuals diagnosed with mental illnesses so that they may achieve the quality of life that they deserve. The present study was primarily interested in collecting data across a university population and using a recruitment email, participants were invited to take part in the study.

It was hypothesized that participants who completed the vignette with the character labeled as having schizophrenia would have more negative perceptions than those who received the vignette with no label of a mental illness included. It was also hypothesized that participants possessing a knowledge base of sorts on schizophrenia would perceive individuals diagnosed with schizophrenia as less dangerous and violent, and be less likely to desire social distance from said individuals. Lastly, it was hypothesized that participants who knew someone who had been diagnosed with schizophrenia would be less likely to exhibit high amounts of stigma.

Method

Participants

A sample (n = 187) of faculty (n = 13), students (n = 121), and staff (n = 19) from Memorial University of Newfoundland (MUN), and a group non-affiliated with MUN (n = 24) participated in this study. Ten participants did not indicate their position. Of those participants

who indicated their gender, 43 were male (M_{age} = 28.05) and 129 were female (M_{age} = 24.02). All underwent the consent process.

Materials

A recruitment email was sent with a description of the study and a link to the survey package. The first part of the survey package consisted of a consent form which indicated that the study was voluntary, confidential and anonymous and confirmed that the participant was at least 19 years of age. Subsequent to the consent process the participants, in an independent measures design, received one of two vignettes. The vignette for the experimental group (i.e., Stigma group) described an individual who was diagnosed with schizophrenia and exhibited a number of the symptoms of schizophrenia as listed in the DSM-5 (e.g., hallucinations). The control group had the same narrative, except that the individual was not labeled as a person diagnosed with schizophrenia (i.e., No Stigma group). The final section of the survey was a series of questions about the participants' general opinion (i.e., perception) and knowledge of schizophrenia. Upon completion of the survey, participants were directed to a debriefing and educational section describing the disorder and listing various symptoms of the disorder. The survey package in its entirely can be seen in the appendix.

Procedure

Participants were surveyed online using a link that was provided in the recruitment email. Informed consent forms were supplied to all participants, which said that their participation was completely voluntary and anonymous, and that they were free to stop at any time. Participants were also given contact information to a Mental Health line to use in the case that the study caused any unpleasant feelings.

Participants were then given a short passage to read. Half of the participants received a passage describing an individual who had been diagnosed with schizophrenia and was experiencing a psychotic break, and the other half received a passage describing someone behaving in the same manner, but without the label of schizophrenia. After indicating that they had read the passage, participants were then directed to a series of questions pertaining to the passage they received, which was followed by the knowledge based questionnaire.

The last portion of the survey was an educational debriefing section which contained the correct answers, and an explanation of those answers, to the knowledge based questions. Contact information on how to obtain the results of the study, as well as the Mental Health line was reiterated at the end of the debriefing. Participants were then thanked for their participation.

<div align="center">

Results and Discussion

</div>

Descriptive statistics for the scenario type and the position of the participant are shown in Table 1. A 2 (scenario) x 4 (position) independent measures ANOVA was conducted to examine potential differences in the perception of schizophrenia. The results revealed that the interaction between scenario type and position was not significant, $F(3,169) = 1.10$, $p=.353$, $n_p^2=.019$ and neither was the main effect for scenario type, $F(1,169) =.69$, $p=.409$, $n_p^2=.004$. This suggested that there was no significant difference in perception scores regardless of whether the participant received the scenario with the label of schizophrenia or the scenario without the label of schizophrenia. Furthermore, the main effect for position was also not significant,

Table 1

Scenario Type and Position on Perceptions of Mental Illness

Scenario	Position				
	Student	Faculty	Staff	No Affiliation	Overall
Label					
M	25.88	22.40	26.33	27.20	25.88
SD	5.16	3.65	8.03	5.96	5.51
n	67	5	9	10	91
No Label					
M	25.50	26.00	29.10	25.21	25.92
SD	6.15	5.48	4.79	4.39	5.73
n	54	8	10	14	86
Overall					
M	25.71	24.61	27.79	26.04	
SD	5.60	5.03	6.49	5.08	
n	121	13	19	24	

$F(3,169)=1.12$, *p*=.344, n_p^2=.019. Therefore, there was no significant difference in perception scores among the students, faculty, staff, or participants not affiliated with Memorial University of Newfoundland.

Additionally and generally, a mean of 30 would indicate a neutral perception with lower scores indicating a lower level of stigmatization. A simple visual inspection of the means suggests that all participants, regardless of the scenario in which they received or their position, had a relatively low level of stigmatization in regards to individuals diagnosed with schizophrenia. This finding, along with the ANOVA results, contradicts the hypothesis that participants who received the vignette with the presence of the label of schizophrenia would have more negative perception scores. It is comforting to discover that in general, the sample's perceptions were much more positive than expected. This finding is inconsistent with other research including a study conducted by Pescosolido (2013), which found that participants who received a vignette that included a label of a mental illness were much more likely to give stigmatizing responses. Furthermore, these participants were twice as likely to report a potential for violence, and five times as likely to prefer a greater social distance from individuals diagnosed with a mental illness (Pescosolido, 2013).

Knowledge of schizophrenia and perception were positively related. The results revealed a significant positive correlation between knowledge and perception, $r=.47$, $n=178$, $p<.001$. Thus, the more knowledge the participant had about schizophrenia in general, the more positive their perception (i.e., less stigmatization). This finding is consistent with previous research suggesting that having a better understanding of the nature of various mental illnesses results in fewer stigmas against individuals diagnosed with a mental illness (Corrigan & Shapiro, 2010). However, this understanding is sometimes not possible due to the typical desire for greater social distancing from individuals diagnosed with a mental illness, especially schizophrenia (Mestdagh & Hansen, 2014). Unfortunately, when people avoid individuals diagnosed with schizophrenia, they eliminate the opportunity to learn factual information about the nature of the illness, as well as its symptoms, which the present study's findings suggest contributes to more positive perceptions. This is another situation that could benefit from interactions with individuals diagnosed with schizophrenia, as well as educational sessions providing factual information about schizophrenia.
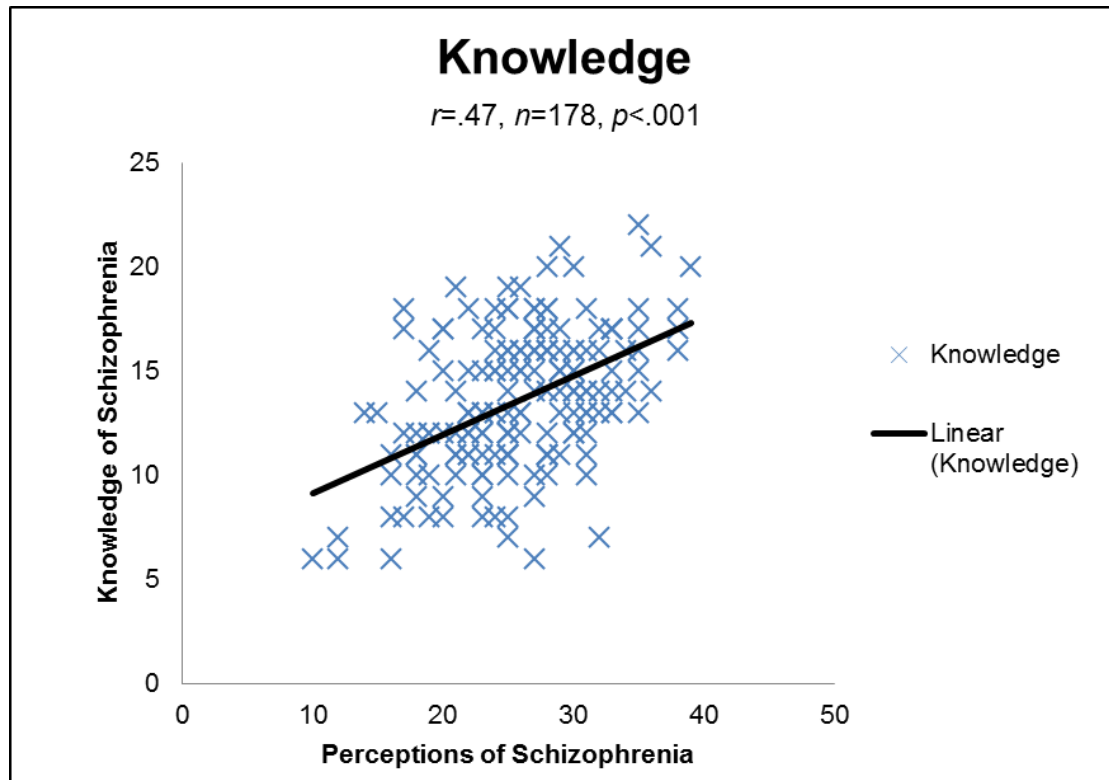
Figure 1. Knowledge of Schizophrenia and Perception Scores.

A 2 x 2 independent measures ANOVA was also conducted on perception as a function of scenario type and whether the participant knew someone who had been diagnosed with schizophrenia. No significant interaction was found, $F(1.173)=.10$, $p=.751$, $n_p^2=.001$ and the
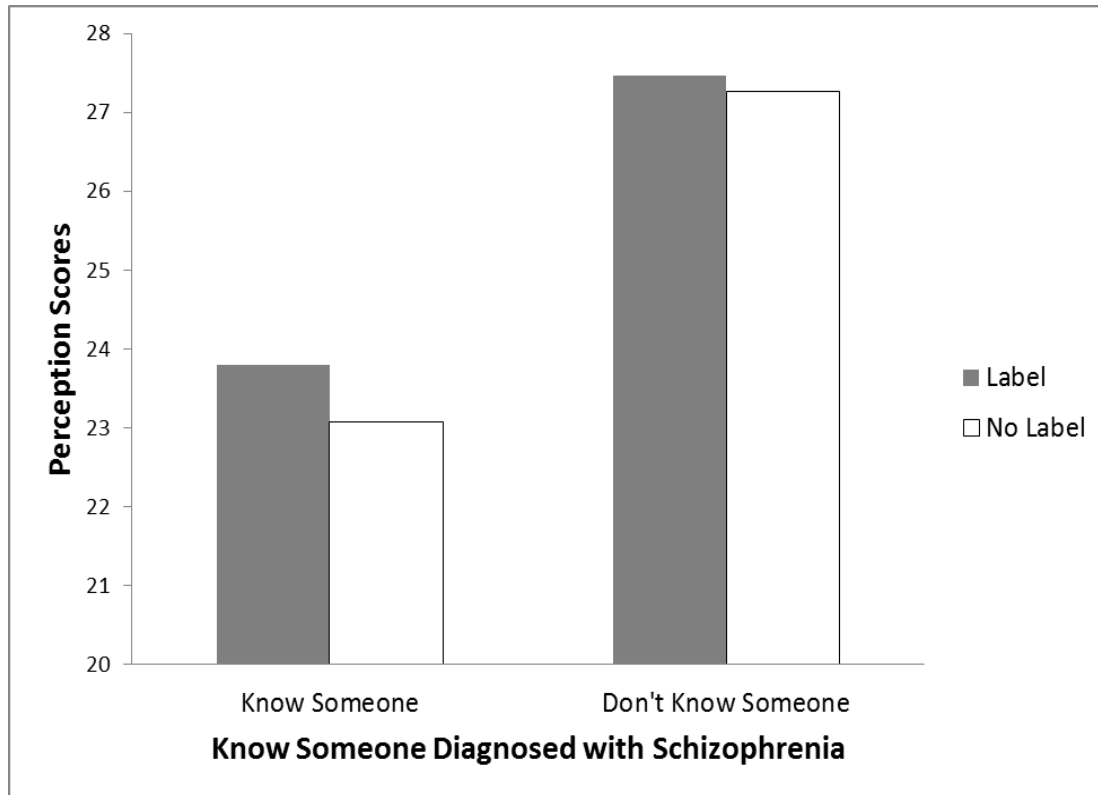
Figure 2. Scenario Type and Knowing Someone Diagnosed with Schizophrenia.

main effect for scenario type was also not significant, $F(1,173)=.32$, $p=.575$, $n_p^2=.002$, indicating that there was no significant difference in perception scores regardless of whether the participant received the scenario with the label of schizophrenia ($M=25.80$, $SD=5.48$), or the scenario without the label of schizophrenia ($M=25.97$, $SD=5.71$). However, a significant main effect was found for whether the participant knew an individual diagnosed with schizophrenia, $F(1,173)=22.34$, $p<.001$, $n_p^2=.114$. Participants who knew someone who had been diagnosed with schizophrenia ($M=23.51$, $SD=5.18$), had a significantly more positive perception than those who did not know anyone who had been diagnosed with schizophrenia ($M=27.36$, $SD=5.33$). This finding is consistent with previous research conducted by Wan-Yuk Harley, Boardman, and Craig (2012) which found that although many individuals diagnosed with schizophrenia reported having few friends, the friends they stated having were described as very motivating and supportive. These friends likely have a reasonable amount of knowledge about mental illness and therefore have more positive perceptions of schizophrenia and do not desire greater social distance from individuals diagnosed with schizophrenia.

An independent measures t-test was conducted examining perception scores and gender. No significant relationship was found, $t(172) = 1.64$, $p=.102$, $d=.25$, however, it is worth noting that females ($M=25.60$, $SD=5.52$) had a less negative perception score than males ($M=27.20$, $SD=5.81$). This result was supported by Mestre, Samper, Frias, and Tur (2009) who found a statistically significant difference between males and females in that females have a greater ability to feel or experience the emotions of other (emotional empathy), as well as the cognitive capacity to understand the emotions of others (cognitive empathy).
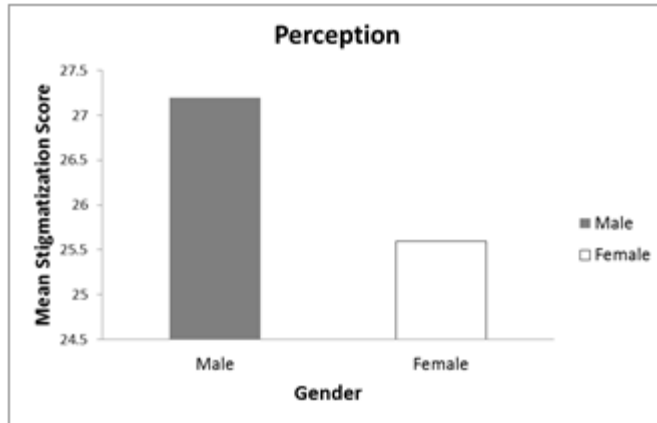
Figure 3. Perception Scores and Gender.

Frequencies were gathered observing the amount of times participants chose different labels to describe an individual who has been diagnosed with schizophrenia. Unpredictable was the label chosen most often (n=104), followed by sick (n=61), crazy (n=15), weird (n=13), insane (n=8), and psychopath (n=4). There were also participants who reported not using any of the labels to describe someone who has been diagnosed with schizophrenia (n=57). Unpredictability is often used in other studies examining labels used by participants to describe an individual diagnosed with schizophrenia. Wright, Jorm and MacKinnon (2011) used five stigma components to determine which of the labels was used most often in members of the public. Although all the means of the stigma components were relatively low, the mean was highest for the unpredictable/dangerous stigma component (Wright, Jorm & Mackinnon, 2011).

Figure 4. Frequency of Chosen Labels.

A Chi-square test was then conducted to examine the relationship between knowing someone diagnosed with schizophrenia and labeling said individuals as unpredictable. It was found that participants who reported knowing someone diagnosed with schizophrenia were less likely to label them as unpredictable when compared to partici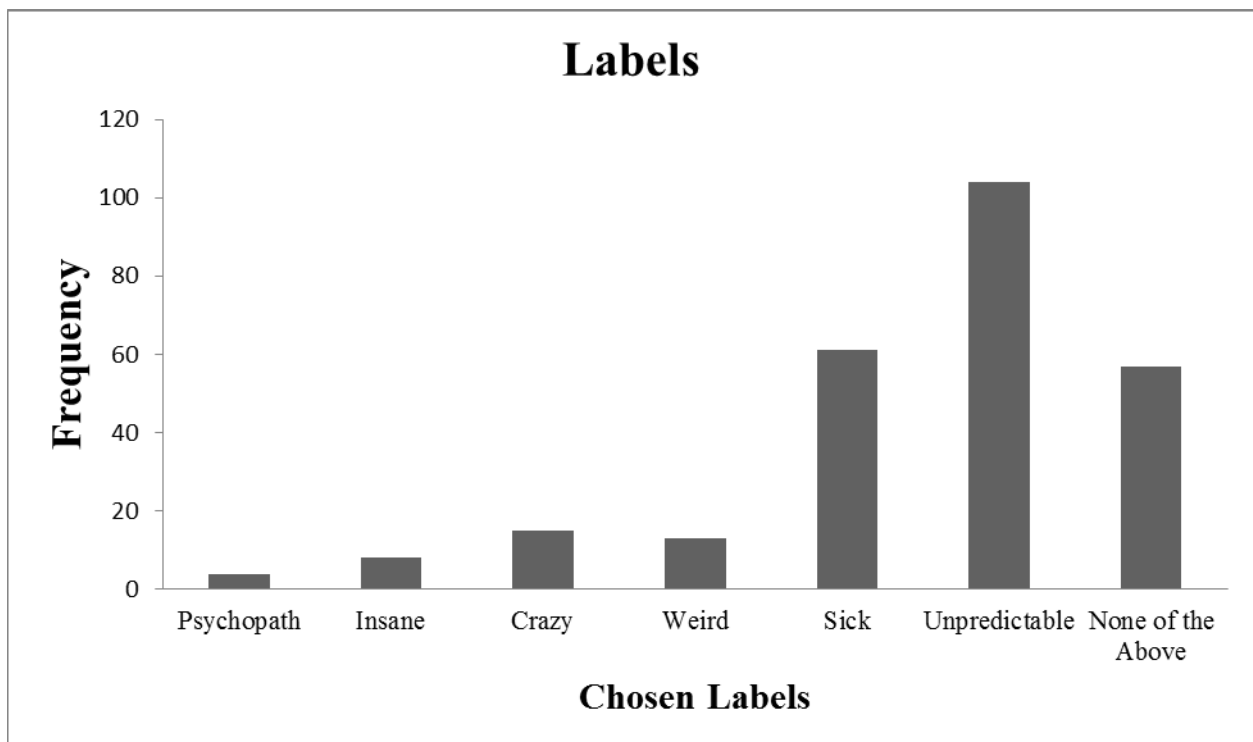pants who reporting not knowing someone diagnosed with schizophrenia, $X^2(1, N = 182) = 9.60$, $p = .002$, $\phi^2 = .05$. In general, associating schizophrenia with perceived violence and unpredictability is commonly found in the literature (Mestdagh & Hansen, 2014). Individuals diagnosed with schizophrenia have discussed how this discrimination is partially due to the way in which the media portrays individuals diagnosed with schizophrenia (Mestagh & Hansen, 2014). An individual diagnosed with schizophrenia noted that in the media, whenever something dangerous happens, reporters never fail to mention that the perpetrator was a "mentally disturbed individual with schizophrenia" (Gonzalez-Torres, Oraa, Aristegui, Fernandez-Rivas & Guimon, 2007).
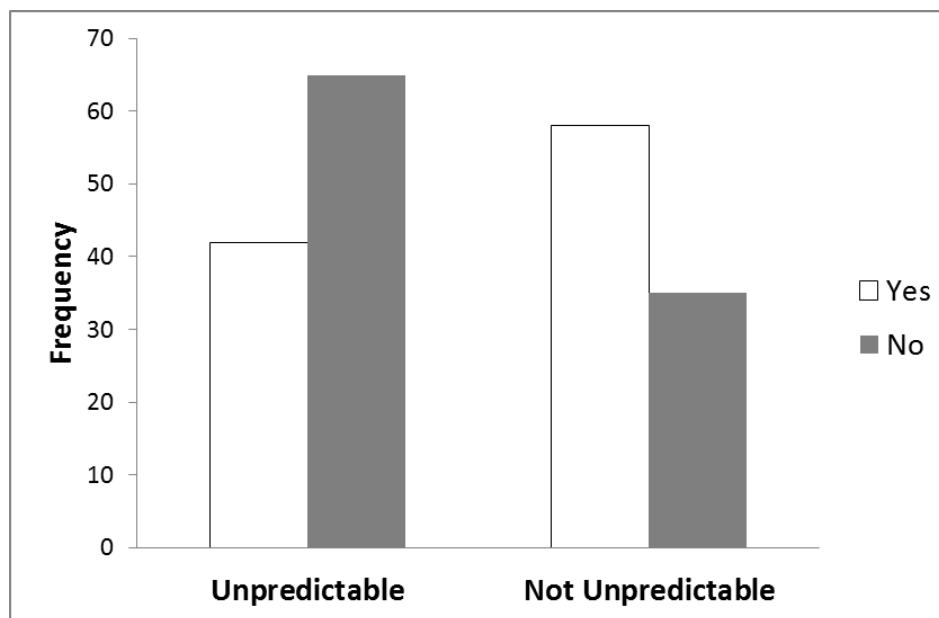
Figure 5. Knowing Someone Diagnosed with Schizophrenia (Yes/No) and ChoosingUnpredictable Label.

Conclusion

The current study would have benefited from a larger sample size, specifically, more faculty members. The faculty and staff sample was small, especially compared to that of the student sample. Perhaps it would have affected the results of the study if a larger number of faculty participants were obtained.

Secondly, the way in which the vignette was presented could have been improved. The purpose of the vignettes was to propose a situation to participants that were of similarity, except one contained the label of schizophrenia and the other did not. In the future, it would likely be beneficial to use a vignette with a less obvious connotation. It is likely that participants assumed the presence of a mental illness, regardless of whether the label was present and whether they had any previous knowledge of schizophrenia. The behavior described in the vignette was not indicative of usual behavior observed in public settings, therefore suggesting that participants' answers may have been influenced.

Based on the results of the present study, it is evident that future research needs to be conducted in this area. Findings indicate that stigma is still a prevalent issue in society and action must be taken to avoid stigmatization levels continuing to increase in the future. As noted, education has been found to be the most dominant and beneficial method for reducing stigma against individuals diagnosed with schizophrenia. To reiterate, individuals diagnosed with a severe mental illness experience a less satisfying quality of life due to various forms of stigmatization against them. It has been found that by increasing the amount of knowledge a person has about schizophrenia, positive attitudes towards the illness also increase. Reducing stigmatization against individuals diagnosed with schizophrenia is of upmost importance so that they are able to achieve the quality of life they deserve without having judgments and social barriers placed in their way.

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Appendix A

Perceptions of Mental Illness

Informed Consent Form

The purpose of this informed consent form is to make sure you understand the nature of this study and your involvement in it. This consent form will provide information about the study, giving you the opportunity to decide if you want to participate.

Researchers: This study is being conducted by Lindsay Collins as part of the course requirements for her Psychology degree, under the supervision of Dr. Peter Stewart.

Purpose: The study is designed to investigate the perception of mental illness. The results will be used to complete an independent project as part of the course requirements.

Task Requirements: You will be asked to read a short passage and then answer several questions about the passage. You will then be asked to complete a separate questionnaire immediately after.

Duration: It will take approximately 15 minutes to complete.

Risks and Benefits: If this study raises any personal issues for you, please contact the Newfoundland and Labrador Mental Health Crisis Centre at 1-888-737-4668.

Anonymity and Confidentiality: Your responses will be completely anonymous and confidential. Please do not include any identifying marks on any of the pages.

Right to Withdraw: Your participation in this research is voluntary and you are free to stop participating at any time. You may also skip any questions you do not want to answer.

Contact Information: If you have any questions or concerns about the study, or wish to see the results of the study, please feel free to contact Lindsay Collins at lcollins@grenfell.mun.ca, or Dr. Peter Stewart at pstewart@grenfell.mun.ca after May 01, 2014.

I acknowledge that I have been informed of the nature and purpose of the study, and I freely consent to participate. The informed consent form will be placed in a separate envelope to ensure anonymity. I have also received a copy of the informed consent form for my own records.

Signed_____

Date_____

Appendix B

Please read the passage and answer the questions that follow. Please know that there are no right or wrong answers; we are simply looking for your honest opinion.

Andrew is 23 years old. He is diagnosed with schizophrenia and is known for claiming that people are "out to get him." One day, you see Andrew holding his face and screaming for people to leave him alone. A couple days later, Andrew is walking down the street toward you.

1. I would feel nervous to pass this person on the sidewalk.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

2. I would feel afraid of what this person may do.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

3. This person should be avoided.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

4. I would cross the street to avoid contact with this person.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

5. This person's behaviors could be dangerous to me or others.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

6. This person may be violent.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

7. I would feel sympathy for this person.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

8. I would try to help this person.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

9. I would ignore this person and continue walking.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

10. I would avoid walking down that street in the future.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

Appendix C

Please read the passage and answer the questions that follow. Please know that there are no right or wrong answers; we are simply looking for your honest opinion.

Andrew is 23 years old. He is known for claiming that people are out to get him. One day, you see Andrew holding his face and screaming for people to leave him alone. A couple days later, Andrew is walking down the road toward you.

1. I would feel nervous to pass this person on the sidewalk.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

2. I would feel afraid of what this person may do.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

3. This person should be avoided.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

4. I would cross the street to avoid contact with this person.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

5. This person's behaviors could be dangerous to me or others.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

6. This person may be violent.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

7. I would feel sympathy for this person.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

8. I would try to help this person.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

9. I would ignore this person and continue walking.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

10. I would avoid walking down that street in the future.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

Appendix D

Please answer the following questions about schizophrenia.

1. Individuals who are diagnosed with schizophrenia are typically dangerous and violent.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

2. Individuals who are diagnosed with schizophrenia and are receiving treatment are not typically dangerous and violent.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

3. Individuals who are diagnosed with schizophrenia have split personalities.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

4. There is no cure for schizophrenia.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

5. Individuals who are diagnosed with schizophrenia are always paranoid.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

6. Individuals who are diagnosed with schizophrenia should be permanently hospitalized.

1	2	3	4	5
Strongly disagree	Disagree	Don't know	Agree	Strongly agree

7. Check any of the following that you would use to describe someone who is diagnosed with schizophrenia:

_____ Psychopath

_____ Insane

_____ Crazy

_____ Unpredictable

_____ Weird

_____ Sick

_____ None of the above

8. Do you know someone who has been diagnosed with schizophrenia?

_____ Yes   _____ No

Demographics

Age: _____

Gender: _____

Please check your position at Memorial University of Newfoundland:

_____ Student

_____ Faculty

_____ Staff

_____ I have no affiliation with Memorial University of Newfoundland

Please indicate the campus you attend:

_____ St. John's campus

_____ Grenfell Campus

_____ Marine Institute

_____ I do not attend Memorial University of Newfoundland

Appendix E

Perceptions of Schizophrenia: Debriefing

This study is being conducted to complete requirements for a psychology degree.

According to the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013), schizophrenia is defined by one or more of the following:

- Delusions

- Hallucinations

- Disorganized thinking (including speech)

- Disorganized or abnormal motor behavior

- Negative symptoms

There are two categories of symptoms in schizophrenia. The first is positive symptoms (Type 1 symptoms) which are characterized by the experience of hallucinations and/or delusions. The second is negative symptoms (Type II symptoms) which involves the absence of behaviors (e.g. severe reduction or complete absence of emotional responses to the environment).

In reference to the questionnaire just completed, the following are the correct answers for the questions 1 through 6, as well as explanations for each answer.

1. Individuals who are diagnosed with schizophrenia are typically dangerous and violent, &

2. Individuals who are diagnosed with schizophrenia and are receiving treatment are typically dangerous and violent.

   Studies have shown that people who are diagnosed with schizophrenia are no more dangerous than the rest of the population. Furthermore, individuals receiving treatment are often reserved, withdrawn, and wish to be alone.

3. Individuals who are diagnosed with schizophrenia have split personalities.

   Individuals who are diagnosed with schizophrenia do not have split or multiple personalities.

4. There is no cure for schizophrenia.

   There is currently no cure for schizophrenia, but research has shown that receiving treatment can reduce the symptoms.

5. Individuals who are diagnosed with schizophrenia are always paranoid.

   Individuals who are diagnosed with schizophrenia may experience delusions, which are firmly held false beliefs. Some delusions are paranoid in content.

6. Individuals who are diagnosed with schizophrenia should be permanently hospitalized.

Permanent hospitalization or institutionalization is not the treatment for schizophrenia.

If you have any questions or concerns about the study, please feel free to contact Lindsay Collins at lcollins@grenfell.mun.ca or Dr. Peter Stewart at pstewart@grenfell.mun.ca. If this study raises any personal issues for you, please contact the Mental Health Crisis Line at 1-888-737-4668.

Thank you for your participation.

Telling Your Story: Victim Impact Statements and the Judicial System

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Abstract

The utility of victim impact statements is not as clear cut as might be expected. Instead, within the criminal justice system victim impact statements have both positive and negative impacts. Through a comprehensive literature review, the impacts that victim impact statements, both positive and negative, have on victims, jury members, and judges was examined. Evidence suggested that there are more negative impacts of victim impact statements than positives for all three of the criminal justice positions. Evidence suggests that victim impact statements negatively bring emotion rather than reason into the courtroom. However, research also suggests that victim impact statements can be beneficial to the victim's healing process through the continuous review of their incident. The influence of victim impact statements need to be understood by the criminal justice system and the victims who avail of such statements.

A victim is someone who has felt the effect of harm, someone who has suffered physical and/or emotional loss as a result of an offence (Criminal Code of Canada, 2014). For many years the victim's personal and psychological effects resulting from an offence have been discounted and ignored. In recent years, however, the victim's role in the administration of criminal justice has increased. Victim advocate groups have recognized the need to improve the treatment of victims and the need to involve the victims within the criminal justice process.

Research suggests that a victim is negatively impacted if unable to share his/her experience and personal interpretation of the offence. These impacts include increased feelings of alienation by the criminal justice system, a feeling of helplessness and loss of control, along with an increased lack of desire to cooperate with the criminal justice system (Davis & Smith, 1994; Erez, 1991; Kilpatrick & Otto, 1987). So, how should the justice system then involve victims in the administration of criminal justice? What can be done to provide the victims with more positive outlooks of the justice system? Will the victim's psychological well-being be improved after divulging a witness impact statement? Finally, how will the victim's involvement impact the justice process in terms of the decisions on sentencing and retribution made by the jury members and the judge? These are all questions the government and criminal justice officials have asked and possibly answered via the introduction of victim impact statements (VIS).

In 1982, during a White House Rose Garden ceremony, the then President of the United States, Ronald Reagan, developed the President's Task Force on Victims of Crime (PTF) (Davis & Smith, 1994; Paternoster & Deise, 2011). One result of the PTF was a greater emphasis placed on the inclusion of the victims in the criminal justice process. The PTF's central concern was the large imbalance between the legal rights of a defendant and the rights of a victim (Paternoster & Deise, 2011). A final report in December of 1982 concluded that victims benefit when explicitly involved in the criminal justice process as it provides them with a role to play and allows their voice to be heard (Paternoster & Deise, 2011). As a recommendation, and an attempt to secure

victims a greater role in the adjudication process, the PTF recommend collecting VIS from the victims during the sentencing process (Paternoster & Deise, 2011).

By 1988, Canadian legislation had been written, under Section 722 of the Criminal Code, allowing the inclusion of VIS. Known as Bill C-41, the Canadian Courts mandated that all statements be taken into consideration for the purpose of determining a sentence (John Howard Society of Alberta, 1997). Furthermore, in December of 1995, Bill C-37 insisted that victim impact statements be presented in youth court, and that all statements are to be prepared in accordance with the procedures established by the Lieutenant Governor in Council within each Canadian province (John Howard Society of Alberta, 1997).

In large part, victim impact statements were adopted into the justice system as a means to combat the negative criticisms regarding the miniscule role victims had in the criminal justice system (Griffith, 1995). In VISs, victims are provided the opportunity to relate the harm (i.e., impact) done to them by the crime and to express their personal concerns. The inclusion of VIS in the process came with the expectation that the information provided will have an influence on the sentencing of the defendant (Davis & Smith, 1994). A statement may be written or given orally and allows the victim of a crime to describe to the court, or the parole board, the impact the offence has had on him/her (VIS Guide for Completion, 2010). Although the presentation of VIS being given orally is not as common as those given in a written formation (Miller, 2013), it is also possible, if requested by the victim, that the prosecutor must orally present the statement to the court (Schuster & Propen, 2010).

Recently, victims have been given the opportunity to submit a VIS in parole hearings for offenders serving sentences longer than a two year period (Miller, 2013). However, during parole eligibility hearings authors of VISs are more likely to be victims of sexual assault or relatives of murder victims (Miller, 2013). One may assume that with the opportunity to provide information, victims would take full advantage of it. However, it has been found that the percentages of victims using VISs vary, submitting ranges from 10% to 23% in Canada, and 15% to 30% internationally (Miller, 2013). While these rates vary, there are characteristics of individuals who are more prone to submit VISs including being a woman and/or vulnerable (i.e., elderly, a minority, or pregnant), being victimized at home, by a known offender, or by a male offender (Miller, 2013).

As each offence is different and specific, it is important that each statement provide specific details of the offence. In general, the VIS must include a summary of the harm or trauma resultant from the crime, along with a summary of any economic hardship or damage suffered as a result. Finally, at least in some states, the victim's reaction to the proposed sentence or disposition is also meant to be included (Schuster & Propen, 2010). Additionally, the statement must include an in-depth summary of the emotional damage caused by the crime, and an explanation of any medical or psychological treatments required by the victim or the victim's family (VIS Guide for Completion, 2010). In Canada, it is suggested that the VIS be divided into three categories: financial, physical, and emotional impact (Canadian Resource Centre for Victims of Crime, 2014). Regarding the financial impact, a detailed assessment of economic impact should include all costs incurred as a result of the crime, such as any medical, funeral, therapy, and/or loss of income during the healing process. The physical impact section should include details relating to any and all physical injuries suffered, whether they are temporary or permanent. Finally, the emotional impact section should, as specifically as possible, include any distress the crime has caused the victim. This part of the VIS should indicate whether the victim suffers from, as a result of the crime, depression, mood swings, nightmares, post-traumatic stress

disorder or any other psychological trauma while making sure that all specifics are included (Canadian Resource Centre for Victims of Crime, 2014).

As there are many requirements for a victim in terms of completing an impact statement, the justice system is also required to inform the victim of his/her rights to present a VIS. Canadian law requires judges to ask the Crown, before imposing a sentence, if the victim has been informed of the opportunity to prepare a victim impact statement (Criminal Code of Canada, 2014). An impact statement can only typically be used if, or until, a criminal conviction has been rendered. Regardless of at what point in the justice process it is used, it is important for a victim to understand the full logistics of an impact statement. Once an impact statement has been entered into court, it becomes a record for the public; the victim should be made aware that the statement may become available to the media as well (Criminal Code of Canada, 2014). Further, the VIS is made available for the defense and as a result it is also available to the offender. Additionally, the victim should be aware that the defense may question him/her on his/her statement.

The criminal justice process typically proceeds in three steps. First, a victim reports an offence against him/her to the police. The police, in consultation with the crown attorneys, decide whether or not such offences require a court hearing. If so, then a jury and judge become the second and third steps, respectively, in the criminal justice process. The judge is the final decision maker on sentencing for an offender. Once all the facts are gathered, all testimonies are heard, the judge will render a decision as to whether or not he/she will coincide with the jury member's decision and give the sentence that has been suggested. Because a victim impact statement presents the financial, physical, and emotional impact that the crime has had on the victim, such evidence may evoke emotion in the judge. It is important that the judge learn ways to differentiate from emotions he/she feels towards the victim and the facts which remain within the case being presented (Davis & Smith, 1994).

Obviously, the inclusion of victim impact statements play a large role in these latter two stages by providing information that might otherwise be left unheard. This review intends to examine various aspects of victim impact statements and how such statements positively and negatively impact decisions, emotions, and outcomes for all involved in the process, including the victims, the jury members, and the judges. Further, this review briefly touches on the influence that VISs may have on the offenders.

Pessimistic Views of Victim Impact Statements on the Victim

Although victim impact evidence is often viewed as an additional avenue in the healing process for victims, some critics suggest that VISs have more of a negative influence than they do positive. It has been long suggested that victim impact statements unrealistically raise a victim's general expectation of the criminal justice system. That is, by providing the court with their VIS, the victim is given the impression that the statement will have a major influence on the sentencing of the offender (Davis & Smith, 1994; Kilpatrick, Beauty, & Howley, 1998). The crime is very personal and impactful for the victim and the expectation is that, by relaying this information in court, it will be equally impactful on the jury and judge. If this expectation is not realized, an additional adverse effect may be experienced by the victim. While the victim plays some role in the sentencing, a victim impact statement is most often times completed to further provide the judge and jury with details of the impact that the victim has endured.

Further, victim impact statements are sometimes known to aggravate a victim's psychological well-being as he/she must relive the incident in order to provide sufficient detail in the statement (Erez, 1991). When VISs are used during court hearings, the defendant is then given a chance to challenge the facts given by the victim, usually leading to an escalation in the court room. During such escalation the judge can determine whether or not the case should go to cross-examination, usually furthering negative impacts on the victim's psychological well-being (Erez, 1991).

Longitudinal studies have shown that VISs do not increase satisfaction of the court system. Victim impact statements are viewed to be narratives that should be suppressed because of the inappropriate emotions it evokes in criminal sentencing. Specifically, victim impact statements appeal to hatred, the desire for undifferentiated vengeance, and even bigotry in some cases (Davis & Smith, 1994). It is one opinion that VISs bring emotion rather than reasoning to the court room. Emotional closure is thought to be gained when given the opportunity to voice one's own concerns. However, it is often shown that victims of a criminal offence become vindictive and use VISs to seek a more severe punishment for the offender (Erez, 1991). Researchers who oppose victim impact statements indicate that emotional closure for victims is not found through voicing emotional impact on paper. The deprivation endured by an offender being placed behind bars in no way, shape or form eliminates the emotional, physical, or financial harm endured by a victim (Schuster & Propen, 2010). However, closure can be found through understanding the incident and accepting what has occurred. In many cases learning to forgive the offender is a great way to heal from an offence (Grabosky, 1987).

When a victim impact statement is provided, it is used by the court system and is considered the property of the public. Court systems use VISs as a means of understanding the offence and gaining further knowledge or details of the incident. Some critics have argued that VISs undermine the courts insulation from unacceptable public pressures (Erez, 1991). Statements received from the victims may inject a source of inconsistency and disparity in the sentencing, and although the statement may provide a sense of resiliency in the victim, it may also reveal a sense of vindictiveness or other negative personality attributes of the victim (Grabosky, 1987). Simply, it is important for those in the justice system to be aware that emotions sometimes speak louder than reality and the justice system needs to stay focused and disregard any unnecessary information from an impact statement.

The criminal justice system is an already overburdened and under-represented system that often has to endure many delays. Opponents of VIS suggest that the probability of delay increases, as does cost, if it is necessary to wait for a VIS, which will place additional unnecessary burdens on the court and the defendant as well (Erez & Roeger, 1995).

Some opponents have also argued that victim impact statements usually add little by way of new information to the case. Victim harm and mitigating or aggravating circumstances that affect the victim are already factored into the offence definition (Hellerstein, 1989). The fact that the emotional harm and facts have already been considered in a case, only potentially leads the victim to further victimization when having to retell the incident in an impact statement.

Optimistic Views of Victim Impact Statements on Victims

Studies have suggested that often victim's grievances are as much with criminal justice procedures, particularly their lack of involvement in decision making processes, as they are with the outcome. Victim impact statements, as previously mentioned, are a way for victims of

criminal offences to express their emotional, physical and financial hardship as a result of an offence against him/her. It has been suggested that victim impact statements will help promote the victims psychological recovery from a criminal offence, while also providing the victim a means of emancipating emotions that would not otherwise be heard (Kilpatrick & Otto, 1987). In any situation, knowing that one's participation has increased the desired outcome of an action will increase the satisfaction of participation. Allowing victims to state their concerns and personal impacts in the process of prosecution could help mitigate feelings of helplessness, loss of control induced by victimization, while also providing the victim a sense of equity (Zehr & Umbreit, 1982; Young, 1987).

A major source of healing and restoration for victims stems from the involvement and opportunity to voice concerns over the offence (Erez, 1991). Having a voice and knowing that your voice is being heard has a tangible effect on the victim by, at a minimum, allowing the victim to feel that the effects of the crime on him/her matters to the justice system. Victim impact statements can be used as a means of healing if continuously updated. The victim can view the initial statement and the subsequent statements and track the progress of healing which he/she has made since the incident occurred (VIS Guide for Completion, 2010).

Victim impact statements provide recognition of the victims wishes for parity and individual dignity. Evidence statements will remind judges, juries, and prosecutors that behind the state and the offence there is a real individual who has been negatively impacted by a crime and a person who is interested in providing information towards that end (Henderson, 1985; Kelly, 1987).

Providing details of a traumatic incident that occurred against one's self is evidently a struggle for some. However, most victims find satisfaction in providing the justice system with information that may potentially be used in the courtroom. A major source of satisfaction for victims comes not from any direct effect on the sentence but instead from the judge's attention to their input by citing victims' phrases from their victim impact statements (Erez, 1999). When personal impact is cited within the courtroom with the presence of the offender, many victims' feel that the offender is being aggravated which gives the victim a sense of pleasure (Erez, 1999).

Victim impact statements not only have positive outcomes for the victim but, in some cases, may positively influence the offender as well. Rehabilitation is promoted when the offender, through the use of a victim impact statement, confronts the reality of the harm he/she has caused (Talbert 1988). The offender is able to hear first-hand accounts of the negative and traumatic harm committed against another individual, which may lead to the offender feeling guilty for such actions. A victim impact statement read within the court hearing may also serve to educate the defendant about the consequences of one's actions, which in turn may increase the offender's acceptance of responsibility for the crime (Cassell, 2009). Many critics believe that providing the victim a chance to state one's personal impact from a crime may lead to unequal rights within the court system. This complaint is largely unfounded since the defendant is given an opportunity to speak to their reasoning or to any perceived inaccuracies that have been presented. If anything, the use of victim impact statements has brought a level of fairness not before present in that VISs now ensure that all relevant persons, the state, the defendant, and the victim are heard (Cassell, 2009).

It is also important that criminal justice officials understand that with the acceptance of victims' personal impacts, the victims are more likely to cooperate with the criminal justice system, thereby enhancing the system efficiency

The Influence of Victim Impact Evidence on Juries

The demands that allowed victims some form of participation in the criminal justice process, particularly the prosecution, have inspired much debate among jury members (Erez, 1991). It has been suggested that jury members are impacted on an emotional level when receiving such statements. It has been found that jury members object to VISs because they fear that their control over the cases will be hindered (Erez, 1991). While it has been found that there are many factors that VIS has in terms of impacting jury members decisions, Paternoster & Deise (2011) found that jury members feel that victim impact statements are only moderately influential in terms of affecting their decisions. The following examines the various ways in which VIS has both positive and negative impacts on jury members and to what extent such statements impact the jury's decisions on sentencing.

Positive Impacts of VIS on Jury Members

Certainly, harm done to a victim, including the family, is highly relevant in the determination of the sentencing for the offender, and a victim impact statement is a clear way to address that element. A victim impact statement is a personalized plea to evoke sympathy and increase the motivation to help the victim. If individuals feel that they know the victim, then they are more inclined to want to ease the victims plight than if only being informed about the suffering in the general case (Paternoster & Deise, 2011). Knowing further pertinent personal information about an individual provides jurors with a sense of compassion for the victim and his/her family. Schelling (1968) found that victims who are identified by jury members evoke stronger emotions, such as anger and sympathy, and increases the members desire to help the victim. The information shared in a victim impact statement helps to further personalize the victim to the jurors on top of what general information they might already know of the victim or victim's family (Paternoster & Deise, 2011).

Jurors are known to place emphasis on the emotions that are evoked in response to VIS. Although over time emotional emphasis may begin to diminish. Myers, Lynn, and Arbuthnot (2002) examined why victim impact statements increased the chance of death sentencing by examining the influence of VISs as a function of varying levels of crime severity and emotional content. The level of harm that the defendant caused to the victim (mild vs. severe) and the emotional demeanor of the witness providing the victim impact statement (high emotion vs. low emotion) was manipulated in the study to create a realistic justice scenario. It was found that jurors in the severe harm condition were more likely to give a stronger sentence than those in which the harm was mild but surprisingly, it was also found that there was no difference in sentence duration between the high and low expression of emotion condition. It was concluded that jurors seem to base their decisions on the harm done and pay little attention to the emotional impact that the harm as had on the victim or victim's family (Myers et al., 2002). Therefore, when a victim impact statement identifies severe consequences for a victim, as opposed to mild, jury members are more likely to place emphasis on the consequences that the victim will or has experienced rather than the characteristics of the defendant (Hills & Thomson, 1999).

Negative Impacts of VIS on Jury Members

In a study by Luginbuhl and Burkhead (1995), undergrad students were randomly assigned a non-victim impact statement case or a case where a victim impact statement was present. The subjects were told that the defendant had been convicted of a capital murder and

that it was their job to decide whether or not the defendant should be sentenced to life imprisonment or sentenced to death. Luginbuhl and Burkhead (1995) found that for the cases where a victim impact statement had been present, the subjects suggested the death sentence 51% of the time. Contrast this with the cases that did not have a victim impact statement where the death sentence was only suggested 20% of the time. This suggested that developing a personalized view of the victims influenced sentencing decisions in favor of the victim.

It may be assumed that individuals who are viewed as being a more favorable person would receive more empathy from the jury members. However, Greene, Keohring, and Quiat (1998) showed participants a videotaped penalty hearing that lasted about one hour. The respectability of each victim was altered to allow for some victims to be viewed as respectable and liked while others were viewed as non-respectable and disliked by most individuals. Within each penalty hearing a victim impact statement was viewed. It was found that subjects, who saw the victim impact statements for the more respectable victims rated the victims more favorably and believed that the crime had a greater emotional impact on the victim or victim's family. Further, participants rated murder cases as more serious and showed more compassion for the victim and victim's families in the scenarios where the victims were murdered (Greene et al., 1998). The discrimination against non-respectable individuals might lead non-respectable victims to reject completing a victim impact statement, as they may feel that it will not help them in any way within the criminal justice system.

Jury members are a group of individuals within the criminal justice system and as such are required to decide individually how much emphasis to place on the VIS. In some cases there may be ample evidence about the impact the crime had on the victim but in others the statement may be the only piece of evidence that the jury members have of that nature. Harris (1992) contended that victim impact statements may have the effect of blocking jurors' self-criticism process in sentencing due to the extreme emotional reaction to the victim's impact evidence. When the VIS is extremely emotional, the jury members become impacted by the emotional content and then may make a decision on emotional value instead of reason. With that said, it has also been found that there is no substantial effect of victim impact statements on the acceptance of aggravation or mitigation issues (Gordon & Brodsky, 2007). That is, jury members have been shown to be less likely to view victim impact statements as a means of lessening or worsening the offence that the victim as endured. In this case, statements were viewed to only provide victims an opportunity to have a voice and be heard within the justice system. Yet another caveat is that jury members are more likely to be lenient in sentencing in the presence of victim impact statements when there was mitigating circumstances for the offender such as mental illness, hospitalization, or sexual abuse as a child (Gordon & Brodsky, 2007).

There seems to be controversy as to whether VIS will have positive or negative impacts on jury members. When reading a statement that fuses tragic and traumatic events experienced by individual, most would feel some sense of emotional reaction. However, while being a jury member it is important that those emotions be suppressed and inhibited. While most jury members are able to step outside of the lines and see the situation from both view points, it is evident that some members are not always capable of taking a step back.

The Influence of Victim Impact Evidence on Judges

It is mandatory in the Canadian law that judges inquire whether a victim has had the opportunity to express his/her financial, emotional, and physical impacts of the offence and use

the statement during the sentencing deliberations (Miller, 2013). The establishment of VIS in the courtroom has been a contentious subject for many judges. Certainly, the harm done to a victim and/or victims family is relevant to the determination of sentencing for the offender, but it needs to be addressed in clear and elaborate elements. It is important that there be no requirements of judges to impose harsher punishments on offenders who cause the death of a widely loved person, rather than on someone who caused the death of an unloved victim. However, such interruptions occur within the courtroom, creating controversial issues in terms of judge's determination of sentencing (Forsterlee et al., 2004). Although there are negative influences that VISs have on judges when making sentencing determinations, there are often times positive influences as well. With the use of VISs judges feel that there is a closer connection to the cases that are provided, victims can become more satisfied with the sentencing which increases a level of satisfaction in sentencing for judges (Davis & Smith, 1994). The following provides information and background on the various ways in which VISs positively and negative influence judges and their decisions for sentencing.

Positive Impacts of VIS on Judges
          Although judges are often perceived to have flat effect and thus are suspected to be unaffected by the emotional content of VISs, this does not always seem to be the case. Hillenbrand (1987) asked judges if they found information contained in a victim impact statement to be useful for the determination of sentencing and if they considered the information appropriate. The findings revealed that 70% of the judges said that the information contained in victim impact statements about the financial impact of the crime was "very useful" in determining an appropriate sentence, while another 20% found the information to be "useful."
          Furthermore, the majority reported that impact information had considerable weight in both the number and size of restitution orders. Moreover, all judges reported that they would order restitution whenever the victim suffered financial loss and the defendant seemed able to pay. While this study does not account for all judicial systems, it can be noted that there is a significant amount of judges that view the victim impact statement as beneficial. Also, that the statement seemingly provides the judge with additional information that increases the subsequent consequences for the offender.
          Judges are forced to contrast between emotion and reason in order to maintain control over their courtroom decisions. If a judge allowed a manipulation of personal emotions within the courtroom it may lead to inappropriate behaviors from both parties. Any sentencing that may have stemmed from emotion rather than reason may be questioned at latter stages of the judicial process (Schuster & Propen, 2010). When presented with emotional expressions in victim impact statements, judges have learned to appreciate the expressions of compassion and tolerate the expression of grief independent of influence (Schuster & Propen, 2010). In this way, although VIS statements do seem to influence judicial decisions, judges may want the opposite to be perceived. It is also important to note that indicating anger in a VIS rather than hurt may have the opposite effect on a judge since the anger may lead to a negative portrayal of one's self.
          Judges are often known to report different reactions to victim impact statements that are given by victims of sexual assault by complete strangers versus domestic violence where victims are in a relationship with the offender (Schuster & Propen, 2010). There may be many ways in describing why judges would report such differences, however, largely it is because the judge feels sadness and sympathy for the victim because the assault could not have been predicted. Unfortunately, eliciting more ire towards the unknown offender and less to the known offender is

unfair and unprofessional and, while there are many positive and negative impacts that a VIS may have on a judge, it is important that a professional and legal attitude is maintained. Judges are individuals who make final decisions in terms of sentencing for offenders. If a sentencing is given due to emotional or personal reaction brought forth from a VIS, the offender is not the only person that will suffer from the inappropriate sentencing. An offenders family and love ones will also be impacted by the decision that the judge renders. This impact makes it important for a judge to use all significant and appropriate evidence in an appropriate legal manner.

Conclusion

Victim impact statements are a source used within the criminal justice system that allows a victim to express the financial, physical, and emotional loss experienced due to the aftermath of an offence. While there is much empirical data on the effects of victim impact statements on victims, jury members, and judges, there seems to be little agreement about the overall utility of the statement. While statements are used to express the various levels of impact endured by a victim and/or victim's family, many researchers conclude that determining if a VIS is a positive or negative aspect of the justice system is still very controversial.

Victims feel that an impact statement is a way to express the impact of one's psychological well-being to the justice system and to have their voice heard (Hills & Thomson, 1999). Victims are often led to believe that their statement will have a major influence in the sentencing, while in reality of most cases, much of what is interpreted from a VIS is already accounted for within the sentencing process and the victim is only punishing himself or herself by retelling the events (Parsons & Bergin, 2010).

Jury members hold very different perceptions of victim impact evidence. Jury members are the individuals who read the statements and use it for a suggestive sentence for the offender. It should be understood that jury members are sometimes individuals who are pulled from the community and told to sit on the board of jurors. An everyday person with no experience in the justice system may have problems contrasting between emotions and facts of a criminal offence (Erez & Roeger, 1995). However, it has been noted that VISs help jury members to identify victims and make the proposed sentence for the offender a little easier. With that in mind, it has been found that jury members can become very judgmental based on the accounts viewed from a VIS.

Judges are members of the criminal justice system that hold much power in terms of making decisions about punishments for criminal offenders. It can be understood that judges have many different views in terms of having victims participate in the sentencing and providing impact statements. Some judges may feel that having a victim involved may cause a heavier burden on him/her because the victim may expect outcomes that are not attainable for such cases (Davis & Smith, 1994). However, a majority of judges agree that VIS is helpful in understanding financial loss suffered by the victim and helps in setting restitution orders (Hillenband, 1987).

This review attempted to examine the influence of victim impact statements and the presumed detrimental or beneficial effects of such statements on victims, jury members and judges within the criminal justice system. It was expected that there would be much positive insights towards the use of victim impact statements, as they retell the event with additional harm that victim has suffered. However, it is a continuing feature that victim impact statements are interpreted very differently by many criminal justice officials.

Future research needs to be conducted in many different areas, such as how to make a victim impact statement less emotional by based so that it can be more proficient for the justice system. Also, research should be conducted to understand why there is so much controversy about VIS. The purpose of the statements is to provide the victims a chance to express their impact of the offence, and for the judicial system to get a more detailed account of impacts endured. Victim impact statements may be the only way the victim has a voice once the incident gets reported. If such research is conducted and victim advocates are able to raise further awareness for the importance of impact statements, the possibilities of victims feeling more satisfied and accepted within the justice system could potentially become an increased benefit for the judicial system.

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Body Dissatisfaction and the Drive for Muscularity in Young Men

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Body Dissatisfaction and the Drive for Muscularity in Young Men

Body image is the set of images, fantasies, and meanings about the body and its parts (Krueger, 2002). People often evaluate their body and compare it to the other body types of their peers or those in the media. This constant comparative analyzing of one's body can lead to dissatisfaction. Body dissatisfaction has been defined as discontent with the look of one's body, in terms of thinness, muscle size, and/or leanness (Stice, 2002), and has been linked to unhealthy weight control behaviours, binge eating, and alterations in physical activity (Haines, Neumark-Sztainer, Wall, & Story, 2007). Social influences and pressures from family, friends, and the media contribute to an internalization of an ideal body image and an overvaluation of appearance (Stice, 2002). Body dissatisfaction is a growing concern for young men. While much of the literature on body dissatisfaction focuses on young women, in recent years there has been a shift to include adolescent men. The most recent research suggests that body dissatisfaction presents differently in men than in women (Calzo, Sonneville, Haines, Blood, Field, & Austin, 2012).

Many adolescent girls with body dissatisfaction have a drive for thinness; they are predominantly dissatisfied with their weight and body size, compelling them to want to be leaner (Stice, 2002). Young men, on the other hand, often want to simultaneously lose weight and gain muscle; defined as a drive for muscularity (Grossbard, Atkins, Geisner, & Larimer, 2012). The extent of a man's drive to gain muscle has been associated with negative emotions and disordered eating, along with excessive weightlifting, and steroid and supplement use (Cash & Pruzinksy, 2002). The drive for muscularity in young men reflects an ideal muscular body shape as defined by Western cultures (McCreary & Sasse, 2000). Young men balance their thinness and muscularity-oriented eating in an effort to obtain their ideal body image (Griffiths, Murray, & Touyz, 2013).

For some, body dissatisfaction and the increasing pressure to achieve a muscular body image is the foundation of the development of an eating disorder (Ricciardelli, McCabe, Williams, & Thompson, 2007). The encompassing need to become muscular and lean can lead men to disordered eating strategies such as diet restrictions, binge eating, inappropriate compensatory behaviours, and disordered thoughts about weight and shape importance (American Psychiatric Association, 2013). Constant weight lifting and steroid use are also categorized under disordered eating strategies used to achieve a muscular physique (Cafri, Thompson, Ricciardelli, McCabe, Smolak, & Yesalis, 2005). These disordered eating strategies appear to differ based on sexual orientation. From current research, gay and bisexual men are at higher risk of developing an eating disorder than straight men (Kane, 2010).

This paper is a review of the current literature on body dissatisfaction as it presents in young men. More specifically, it explores the drive for muscularity accompanied by thinness in young men. The factors contributing to this drive for muscularity are discussed.

Factors Contributing to Body Dissatisfaction

Body Type

The drive for muscularity presents differently between individuals with different body types. Young men who are average weight have a different type of body dissatisfaction than those who are either overweight or underweight.

A study by McCabe, Ricciardelli, and Holt (2005) found that overweight boys had lower levels of self-esteem and positive emotions and higher levels of negative emotions than average weight boys. Extending on these results in 2010 with a sample of 590 adolescents (344 boys) who were in their first year and third year of high school, they found that, in general, overweight adolescents reported higher body dissatisfaction, more engagement in ways to lose weight, and had more pressure from parents and friends to lose weight than average weight adolescents. More specifically, the boys in the study reported higher scores on body importance and ways to increase muscle than the girls. It was also noted that body dissatisfaction in average weight boys was influenced by positive and negative affect, or their emotions about their weight, as well as messages from parents, friends, and the media. Overweight boys were influenced by positive and negative emotions about their body dissatisfaction and these emotions were a key predictor for weight loss strategies, along with pressure from friends and family. These findings suggest that overweight boys are more concentrated on losing weight where their body dissatisfaction drives their behaviours to lose the weight (McCabe et al., 2010).

Calzo and colleagues (2012) found that both overweight and underweight boys were at risk for body dissatisfaction, with greater body dissatisfaction found in overweight and underweight boys across all ages compared to healthy-weight boys. Calzo et al. (2012) concluded that high body dissatisfaction in underweight boys indicated a desire for bigger muscles and stature, and high body dissatisfaction in overweight boys was evidence of a desire to be lean and muscular.

McCreary and Sasse (2000) developed the *Drive for Muscularity Scale* (DMS) and determined that high school boys had a strong drive for muscularity. High scores on the DMS were related with high levels of depression and low levels of self-esteem. McCreary and Sasse also found that high scores on the DMS were related to more frequent weight lifting per week and dieting in order to increase muscle.

Even though there are some differences in body dissatisfaction between body types, the end goal is the same for both - to be lean and muscular. This drive for muscularity exists across both over- and underweight body types. The lean, muscular body type is the ideal for most young men and when this is not obtained it can lead to dissatisfaction and potentially unhealthy eating and fitness behaviours.

Age

Body dissatisfaction appears to fluctuate with age. Much of the research in this area is focused on the age at which body dissatisfaction first begins for young men, and its persistence through adolescence and into adulthood. There is also interest in the levels of body dissatisfaction throughout adolescence and how these levels interact with age.

There is debate about when body dissatisfaction begins and at the age at which a person has the most body dissatisfaction. Bully and Elosua (2011) studied 935 participants, with an almost equal number of boys and girls, to determine the onset and persistence of body dissatisfaction in children and adolescents. They created four age categories: pre-adolescents (ages 10-12), early adolescents (ages 13-14), mid-adolescents (15-16), and advanced-adolescents (ages 17-18) and the used the *Body Dissatisfaction Scale* to measure the construct at each age.

The *Body Dissatisfaction Scale* is a scale of 10 items with 6 possible graded responses (never to always), which are coded into a range of 0-4 (Bully & Elosua, 2011).

The results for boys showed that body dissatisfaction remained fairly stable throughout each age group (Bully & Elosua, 2011). There was a slight decrease in body dissatisfaction with increasing age, but then an increase in the 17-18 age group (Bully & Elosua, 2011). Pre-adolescents scored 8.31 in body dissatisfaction and advanced-adolescents scored 8.08, with the maximum body dissatisfaction score in boys being 8.31 (Bully & Elosua, 2011). These results suggest that boys show the most dissatisfaction with their body from ages 10-12. It also shows that body dissatisfaction in young men seems to remain stable as they age.

Bully and Elosua (2011) also investigated participants' ideal body mass index (IBMI) for each age group. The IBMI was created to reflect the ideal weight of participants by obtaining an estimated BMI based on each participant's ideal weight. IBMI scores were measured the same as the BMI variable and *Body Dissatisfaction Scale*. They found that IBMI increased with each age group from pre- to advanced-adolescents. IBMI scores ranged from 2.11-2.71. The IBMI at age group 10-12 was 2.46 and steadily increased up to 2.71 at age group 17-18 (Bully & Elosua, 2011). Alternatively, girls IBMI showed a steady decline with each increasing age group. These patterns indicate that young men prefer larger bodies in the form of muscularity as they get older and young women prefer a thinner body type (Bully & Elosua, 2011). Overall, Bully and Elosua found that body dissatisfaction presents more between the ages of 13 and 14 and remains steady throughout adolescence.

In an additional study of body dissatisfaction, Calzo et al. (2012) asked participants to complete questionnaires annually from 1996 to 2001, and every two years after 2001 asking about weight and shape, with questions such as "How often have you felt fat?" and "How happy have you been with the way your body looks?". From the results of these questionnaires, it was found that boys aged 9-10 years old had less body dissatisfaction than all other age groups up to 18 years old. It was also found that older adolescent boys had higher weight and shape concerns than younger adolescent boys (9-10 years old). Calzo and colleagues concluded that older boys may have greater weight and shape concerns because they are near adult maturation when there is an increase in body mass index (BMI). They view this increase of BMI negatively since it prevents them from obtaining a toned and muscular body (Calzo et al., 2012).

Sexual Orientation

Recently, there has been an increase in the number of articles pertaining to body dissatisfaction in homosexual and bisexual men. Of the men who seek help for eating disorders, 14-42% are gay or bisexual (Andersen, 1999). Adult gay men are more likely to have body dissatisfaction and be at greater risk for eating disorders than straight men (Calzo, Corliss, Blood, Field, & Austin, 2013). This is likely due to a drive for lean muscularity amongst gay men (Calzo et al., 2013). Wood (2004) suggests that straight women become fixated on their physical appearance in an attempt to be sexually attractive to men. Because gay and bisexual men also want to appear sexually attractive to men, they are more concerned with muscularity and thinness than straight men (Wood, 2004). This attempt to be attractive to other men supports gay men's concerns with muscularity that centre more on leanness than straight men's muscularity concerns (Calzo et al., 2013).

In an effort to explore this drive for lean muscularity in gay men, Calzo and colleagues (2013) conducted a longitudinal study of muscularity and weight concerns across adolescence and early adulthood for both straight and gay men. Participants were 9-14 years old at the start of

the study. Questionnaires were completed by 5,868 boys every year from 1996 to 2005. Sexual orientation, BMI, muscularity, and weight concerns were explored.

Overall, it was found that there was a desire for bigger muscles and concerns with weight and shape across adolescence (Calzo et al., 2013). Specifically looking at sexual orientation, it was found that gay and bisexual men had an increased desire for toned muscles and more concerns with their weight and shape than straight men (Calzo et al., 2013). It was also reported that straight men wanted to gain more weight than gay and bisexual men (Calzo et al., 2013). To further clarify these findings, underweight boys between ages 16-22 wanted to gain weight more than average weight and overweight boys in the study. For the gay participants in this study, they were more concerned with being lean and toned, whereas straight men wanted to gain weight in terms of muscle. Gay and bisexual men wanted a lean and muscular physique, but straight men were only concerned with muscle gain.

Since this is the first study to look at changes across adolescence and into young adulthood for gay and straight men, it provides insight into the drive for muscularity in relation to sexual orientation. Calzo and colleagues (2013) found that the drive for muscularity increased with age. They also discovered that gay and bisexual men strive for a toned and lean body whereas straight men want to gain weight in the form of bigger muscles. These results suggest that body dissatisfaction may be more prominent in gay and bisexual men who want a very specific toned and lean body type. Results also provide a fresh perspective into potential antecedents of male sexual orientation disparities in clinical eating disorders and disordered weight control behaviours (Calzo et al., 2013).

Other Contributing Factors

There are other factors that influence body dissatisfaction in men, such as the media and social pressures. Through the media, Western societies promote muscular and lean bodies to men as the ideal male body type (Calzo et al., 2012). Television shows, movies, and advertisements are consistently presenting men with very toned, lean bodies. This ideal male body image has extended to the toy industry, specifically action figures, with researchers showing that action figures targeted at boys have become unrealistically muscular over the span of 30 years (Pope, Olivardia, Gruber, & Borowiecki, 1999). The body type presented in these toys was determined to be unattainable, even for advanced bodybuilders (Pope et al., 1999).

Social pressures can also play a role in body dissatisfaction. McCabe et al. (2010) sampled 590 high school students (344 boys and 246 girls) who were in their first and third year of high school. They also investigated the types of messages received from parents and friends to determine their influence in weight loss strategies in young men. Two scales were used in this study; one to measure body dissatisfaction , which was rated on a five-point Likert scale with responses ranging from "extremely satisfied" (1) to "extremely dissatisfied" (5); and another to measure body change strategies, which had rated responses from "never" (1) to "always" (5) on different strategies to increase muscle and lose weight. McCabe and her colleagues determined that weight loss strategies were predicted by the pressures from parents and friends to lose weight which led to body dissatisfaction for normal weight boys. They also found that the same pressures from parents and friends determined boys' need to increase muscle, but more for overweight boys. McCabe and her colleagues also stated that overweight boys picked up on messages from family and friends to lose weight, which shaped their general feelings, feelings about their body, and strategies to lose weight.

Unhealthy Behaviours Due to Body Dissatisfaction

Body dissatisfaction, in interaction with other factors, can sometimes lead to more troubling issues for adolescents. Young men with body dissatisfaction may use unhealthy strategies to obtain an ideal muscular body type, such as disordered eating patterns and the use of steroids and supplements.

The American Psychiatric Association (2013) describes disordered eating as restrictions to one's diet, binge eating, inappropriate compensatory behaviours, and distorted thoughts about weight and shape importance. These characteristics have become more prevalent in young men as a strategy to maintain one's ideal body weight (Cafri et al., 2005). Disordered eating in young men may result in very specific changes to diet in order to build muscle. For instance, the diet may include specific amounts and frequencies of macronutrient intake, changes in diet, and extreme dieting practices that forbids eating certain types of foods based on their nutrient intake (Cafri et al., 2005). These extreme dietary restrictions are often paired with excessive weightlifting and steroid use (Cash & Pruzinksy, 2002).

These disordered eating patterns and physical exercise are used to gain weight in the form of muscle, while at the same time lose weight in the form of fat (McCreary & Sasse, 2002). It has been found that 21.2% to 47% of young men diet to gain muscle (McCreary & Sasse, 2002, Krowchuck et al., 1998, Ricciardelli & McCabe, 2003, as cited in Cafri et al., 2005) while 12.5% to 26% of young men diet in order to lose weight (McCreary & Sasse, 2002, Krowchuck et al., 1998, as cited in Cafri et al., 2005). This is a significant percentage of men who are willing to participate in disordered eating behaviours in order to gain muscle and lose body fat.

Disordered eating in young men can lead to serious physical health risks. Weight lifting is often paired with dieting to increase muscle, which reduces body fat, but if a person eats significantly more than they expend on exercise, they may increase body fat and experience the negative effects of the increase (Cafri et al., 2005). Furthermore, if a person stops their regular exercising routine, but keeps eating in the same excessive way when exercising, they could potentially gain a great amount of weight and be at risk for obesity (Cafri et al., 2005).

Men who are at risk of taking part in unhealthy eating behaviours are both overweight and underweight boys. Calzo et al. (2012) found that overweight/obese boys and underweight boys are very likely to be dissatisfied with their bodies, which may lead to disordered eating and weight control behaviours. Similarly, McCabe et al. (2010) found that overweight adolescents engaged in strategies to lose weight more so than normal weight adolescents. They also found that boys reported higher scores than girls in strategies to gain muscle and pressure to gain muscle. It seems that if the ideal muscular body type for a man is not obtained, both over- and underweight young men will engage in disordered eating behaviour to lose weight and gain muscle.

The use of steroids is occasionally associated with disordered eating. For young men, the main purpose of using steroids is to increase muscle mass and strength (Davies & Smith, 2011). It is important to note that not every man who engages in disordered eating uses steroids, but for those who do, it can cause serious health problems. For example, the use of steroids increases the risk for coronary artery disease (Cafri et al., 2005). Low-density lipoproteins (LDL) and high-density lipoproteins (HDL) are important to coronary health. LDL is considered unfavourable for the body since it encourages the hardening of arteries, whereas HDL is beneficial because it helps in cholesterol removal, which prevents the hardening of arteries (Calzo et al., 2005). Decreased levels of HDL have been found in those people who use steroids, as well as increased

levels of LDL (Kouri, Pope, & Olivia, 1996). This means that those who use steroids to increase muscle mass are at risk of high cholesterol and the hardening of arteries. The use of steroids can cause a range of negative physical health consequences, as well as negative effects on mental health (Calzo et al., 2005).

Conclusion

Body dissatisfaction is common in adolescence. In the past, the literature focused on body dissatisfaction in adolescent girls, but, more recently, there has been interest in this construct in adolescent boys. This expansion to include boys has shown that young men present body dissatisfaction differently than girls; young women have a drive for thinness whereas young men typically have a drive for muscularity. In young men, body dissatisfaction presents differently depending on body type, age, sexual orientation, and other contributing factors.

Future research in this area could explore men who participate in female-dominated activities, such as dance. In general, women in dance have a preference for thinness, which can put them at risk for eating disorders (Tseng, Fang, Chang, & Lee, 2013). More specifically, research has shown that dancers frequently engage in binge eating and purging behaviours (Ringham et al., 2006). It would be useful to explore if men who engage in this activity also engage in the same disordered eating strategies as some women. A future factor to consider would be if sexual orientation of the men would have an impact on in their strategies to maintain weight.

Extending the focus of this paper, it would be interesting to see how body dissatisfaction follows young men into adulthood. There is a gap in the literature on body dissatisfaction in adult men. A longitudinal study that monitors body dissatisfaction in adolescence through to adulthood could add another dimension to this literature.

While body dissatisfaction is not uncommon, especially in young men and women, there are a range of factors that influence it. While the research literature has expanded to investigate this phenomenon in young men and the factors that contribute to it, more research is needed to document characteristics that increase vulnerability to body dissatisfaction and preventive strategies.

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The Four Corners of Serial Murder: Classifying Murderers for the First Time

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Abstract

In this paper the act of serial murder, specifically its motives and behaviors, were assessed. The Holmes and DeBurger (1985) typology was implemented and from it a criterion was derived which included seven individual variables which were used to classify serial murder into five main categories. Information was assessed regarding five separate serial murderers, David Berkowitz, Gary Ridgway, Jeffrey Dahmer, Dennis Rader, and Ted Bundy. Based on the findings of the individual motives and behavior of each of these serial murderers each was classed into one of the five categories. It was concluded that this method of classification does not reflect criminal profiling, nor does it suggest or support it. Rather it suggests that the Holmes and DeBurger typology can be applied to the serial murderer population as a means of categorizing those individuals.

The topic of serial murder has been a field of great interest among the general population for many years. It has been speculated that this fascination began with the London serial murderer who, although never identified or caught, named himself "Jack the Ripper" and terrorized the streets of London killing prostitutes. (Federal Bureau of Investigation, 2008; Lachmann & Lachmann, 1995). Similarly, this fascination recommenced sometime during the 1970s and/or 1980s when serial murderers such as the Green River Killer, and Ted Bundy became known to the public (Federal Bureau of Investigation, 2008). Despite the incredible interest of the general public for the topic of serial murder, their knowledge in the area is often negatively influenced by the presence of assumptions and myths resulting from media coverage and the popularization of such topics in primetime television.

The Federal Bureau of Investigation (2008) suggests that there are stereotypes which exist regarding the behavior and characteristics of serial murder and serial murderers. Many people believe that serial killers are dysfunctional loners, white males, only motivated by sex, unable to stop killing, evil geniuses, and/or wish to be caught (Federal Bureau of Investigation, 2008). However, while these things may be widely assumed, and while there may be exceptions from time to time, these beliefs are most often untrue and are not generalizable across the population of serial murderers. However, Holmes and DeBurger (1985) suggest several characteristics which appear to be consistent among the majority of serial murderers. They state that most serial murderers are white and range from 25 to 34 years of age, tend to be intelligent or "street smart", are charming and charismatic, many are psychopathic or have psychopathic traits/tendencies, often they are fascinated by police work, many were conceived illegitimately, and being abused as children is common. With that said, one of the questions this paper attempts to answer is if there is in fact any truth to the notion that serial murderers share a similar makeup and that they can be categorized into a single group, or whether they can be classified separately based on the differences that may exist between them.

Another confusing factor which is associated with serial murderers is that psychopathy and serial murder share a strong relationship. However, it is important to recognize the type of relationship that is present between the two. While it is true that serial murderers possess some,

or many, characteristics which are consistent with psychopathy, not all psychopaths are serial murderers (Federal Bureau of Investigation, 2008). It is important to note that serial murderers, as a result of characteristics consistent with psychopathy, as well as committing a high number of murders, and lacking of relation to their victims, have been referred to as extreme psychopaths (Angrilli, Sartori, & Donzella, 2013). The psychological disorder of psychopathy is composed of a variety of core characteristics which include; remorselessness, callousness, deceitfulness, manipulation, egocentricity, a lack of interpersonal bonds, superficial charm, externalization of blame, a lack of fear and anxiety, high levels of emotional detachment, use intimidation and/or violence to control others in order to satisfy their own selfish needs, and an unfeeling personality that prevents them from responding to acts or feelings of humanity (Donahue, McClure, & Moon, 2013; Brook, Brieman, & Kosson, 2013; Angrilli et al., 2013; Federal Bureau of Investigation, 2008; Leyton, 2005). However, it is important to note that although these characteristics are associated with psychopathy they are not generalizable across the entire psychopathic population. That is, while one psychopath might be characterized as callous and emotionally detached, another may be deceitful, manipulative and intimidate others to get what they want. Donahue et al. (2013) suggest that those criminals, not specifically serial murderers, who are affected by psychopathy, are often charged with more violent crimes, a wider variety of crimes, and fail treatments and conditional release programs more often than do inmates who are not psychopathic. Donahue et al. (2013) have also suggested that psychopathy can be used as a predictor of recidivism.

  The Federal Bureau of Investigation (2008) suggests that these traits which make up psychopathy can be divided into four separate factors: interpersonal, affective, lifestyle, and anti-social. The interpersonal traits associated with the disorder include glibness, superficial charm, a grandiose sense of self-worth, pathological lying and manipulation of others while the affective traits consist of lack of remorse and/or guilt, shallow affect, lack of empathy and failure to accept responsibility. Lifestyle behaviors, which are said to be associated with psychopathy, involve stimulation-seeking behavior, impulsivity, irresponsibility, parasitic orientation and a lack of realistic life goals. Lastly, the anti-social behaviors include poor behavioral controls, early childhood behavior problems, juvenile delinquency, revocation of conditional release, and criminal versatility. The Federal Bureau of Investigation (2008) also notes that those who suffer from psychopathy and also commit serial murder do not value the idea of human life. They are incredibly callous human beings, which is obvious in the ways which many serial murderers, particularly those who are sexually motivated, target, stalk, assault, and kill their victims without any feelings of guilt and/or remorse. The role of this paper is to classify serial murderers in relation to the four types of psychopathy.

  Psychopathy, despite its prominent role in serial murder, is not the only explanation when it comes to the motivations of a serial murderer. In order to truly define the motivations of a serial murderer one must first understand all other aspects associated with them. At this point, I think it is important to state that while there are aspects associated with serial murderers who are generalizable across the serial murderer population; serial killers are also incredibly unique. That is, serial murderers in their simplest form are the same but unfortunately there is little that is simple about serial murder or the perpetrators of such crimes. The definition of serial murder has been an ongoing topic of argument but typically any definition of serial murder will be composed of two main elements: the period of time between murders and the number of

required victims (Arndt, Hietpas, & Kim, 2004). For the purpose of this paper, I have chosen to use the definition used by the Federal Bureau of Investigation (2008): "the unlawful killing of two or more victims by the same offender(s) in separate events" (Federal Bureau of Investigation, 2008).

While acts of ordinary homicide are usually the result of things such as greed, jealousy, revenge, desire to obtain power/prestige, as well as self-defense, the act of serial murder is deliberate, in that it is a means of obtaining self-satisfaction; satisfying some personal need/urge (Taylor, Lambeth, Green, Bone, & Cathillane, 2012). It is important to note, that despite popular belief, not all serial murders have an underlying sexual component (Leyton, 2005). As well, there is no collective model which can be used to describe a serial murderer (Federal Bureau of Investigation, 2008). It is impossible to uncover each factor which motivated a serial murderer as serial murderers can differ vastly in their behavior and motivations (Federal Bureau of Investigation, 2008). Generally, serial murderers target victims who are strangers to them. Therefore they have no visible relationship with the individual who they chose to murder and the driving force of such urges remains unknown. However, speculations have been made. Taylor et al., (2012) suggest that serial murderers develop as a result of childhood abuse, deprivation and betrayal which in turn results in the acquisition of fantasy and motivations which differ from those who do not experience such things. The Federal Bureau of Investigation (2008) proposes that individuals who commit serial murders react violently due to a lacking of proper coping mechanisms. Further, genetics are also proposed to be a contributing factor to the making of a serial killer however, as just alluded to, the environment is also seemingly equally as important. (Canter & Wentink, 2004).

The Organized/Disorganized Typology

The most popular classification system applied to serial murder is the Organized-Disorganized typology which takes into account the personalities and crime scenes of serial murderers (Canter & Wentink, 2004; Canter, Alison, Alison, & Wentink, 2004). Basically, this typology suggests that those serial murderers who possess organized characteristics will commit organized crimes, while those with disorganized characteristics will commit disorganized crimes (Canter et al., 2004).

A serial murderer who is classified as organized is assumed to be of average to high intelligence and have relatively good social skills. The organized serial murderer also likely maintains a skilled means of employment and lives an orderly life (Canter et al., 2004). As well, the organized type is believed to take time to plan the offenses. This will often be evident in the crime scene as this often involves approaching the victim verbally prior to the murder, using restraints on victims, as well as bringing the murder weapon to the crime and removing it afterwards (Canter et al., 2004). Organized murderers are also often thought to commit murder following some type of personally stressful event which might include, but not be limited to, relational, financial, or employment related strain (Canter et al., 2004).

A disorganized serial murderer is believed to murder spontaneously or as the opportunity arises. This results in minimal planning before, during and after the offense resulting often in a chaotic crime scene. Further, or perhaps because of the spontaneity, most often the offense of the disorganized serial murderer will occur within a short distance of their own home (Canter et al.,

2004). Each of these characteristics is thought to reflect social incompetency and a lack of interpersonal relationships of the serial murderer (Canter et al., 2004). Disorganized murders often involve sexual perversions due to the murderers' lack of social relationships (Canter et al., 2004).

Based on the previous information it can be concluded that serial murderers most often possess characteristics that are consistent with psychopathy (in most cases extreme psychopathy), and that generally serial murderers can be classified as either organized or disorganized based on their personality characteristics and the crime scenes they leave behind. Drawing from this, serial murderers appear to be relatively similar. They share psychopathic traits which develop as a result of either nature or nurture, or likely some combination of the two, and they are either organized or disorganized. Although most could be categorized using this dichotomy and thus divided into two common groups, if you look at the crimes of specific serial murderers, for example Ted Bundy, David Berkowitz, Gary Ridgway, Dennis Rader, or really any other serial killer, they no longer seem so similar. In fact, they probably look incredibly different, and they should. Take, for example, their victim profiles. Ted Bundy lured brunettes using ruses (e.g., injuries) or by posing as an authority figure. David Berkowitz, the Son of Sam, killed people completely at random while Gary Ridgway (i.e., the Green River killer), specifically targeted prostitutes. Dennis Rader (i.e., BTK) blinded, tortured and killed, hence the nickname BTK, his victims who consisted of men, women, and children. The victim profile of each of these men differed substantially from each other. So, with regards to serial murderers themselves, are they the same or are they different? In the remainder of this paper I will answer this question by examining another classification system consisting of four individual categories of murderers.

Holmes and Homes Typology of Serial Murder

The serial murderer can be described as an ultimate figure of violence (Holmes & DeBurger, 1985) and an individual who commits murder without feeling remorse or taking any responsibility for is actions (Holmes & DeBurger, 1985). Not unlike other types of behavior, the motivations behind a certain behavior differ from person to person and the same is true of serial murder (Holmes & DeBurger, 1985). With that being said, Holmes and Deburger (1985) developed a typology which can be used as a means of categorizing the major types of serial murderers. These categories, based largely on the motives of the killings, are visionary, mission, hedonistic, and power/control. Using these four categories it can be argued that despite the differences and uniqueness of any individual serial murderer, each can be classified into one of the four categories. This classification system is extended from the organized-disorganized typology and, as can be seen in Figure 1, can be viewed as a spectrum (Canter & Wentink, 2004). On one end of the spectrum lies the visionary murderer and on the opposite end is the power/control murder, with mission and hedonistic fall in the middle (Canter & Wentink, 2004).
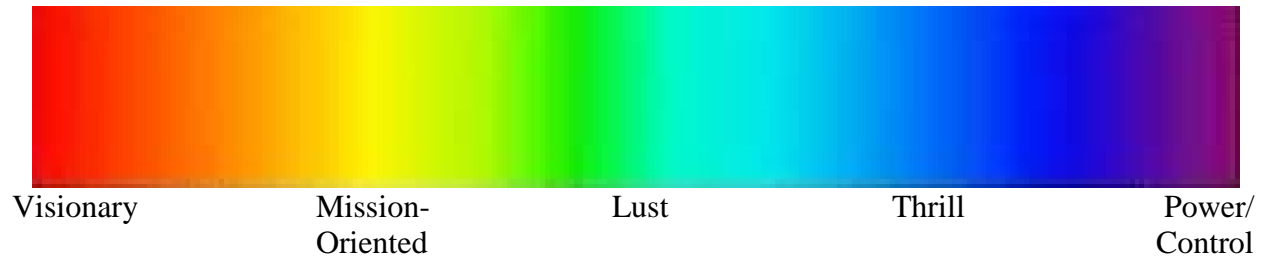
Visionary   Mission-   Lust   Thrill   Power/
                           Oriented   Control

Figure 1. Holmes & DeBurger Typology displayed as a spectrum

Visionary

The visionary murderer is classified as being very disorganized, leaving behind a chaotic crime scene which often involves incriminating physical evidence, reflecting the disorganized personality of the murderer himself (Canter & Wentink, 2004; Taylor et al., 2012). This type of murderer usually suffers a mental break from reality, and is often considered to be psychotic (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004; Taylor et al., 2012). These murderers are labelled as visionary because they kill in response to commands received via 'voices' or 'visions' (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Leyton, 2005). These voices and visions also typically select the victims, or category of victims, which the visionary murderer targets (Leyton, 2005; Canter & Wentink, 2004).

This type of murderer is also considered to be act focused, that is, they are focused only on the murder itself (Canter & Wentink, 2004). A murder in this category is often accompanied by a ransacking of the property since the desire for a quick kill is usually violent and frenzied and enunciates a sense of overkill. Murders of this type are often committed by repeated bludgeoning (Canter & Wentink, 2004; Taylor et al., 2012). As well, visionary murderers usually use a weapon that is available to them at the time of the murder, a weapon of opportunity, and they neither bring the weapon with them nor take it when they leave (Canter & Wentink, 2004). Lastly, these murderers do not make any effort to disguise their crime by moving or attempting to hide the victim's body. Instead, the bodies are usually found unclothed at the scene of the crime (Taylor et al., 2012).

Mission-Oriented

A mission-oriented murderer is an individual who decides to "go on a mission" (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Leyton, 2005). The mission is one which will rid the world of a particular group of people whom the murderer views as being loathsome or inadmissible (Leyton 2005; Canter & Wentink, 2004). These murderers are thought to feel compelled to use murder as a means of eliminating these particular people (e.g., prostitutes) from the human population (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004), and like visionary killers, are also act focused murderers (Taylor et al., 2012; Canter & Wentink, 2004).

However, unlike the visionary murderer, mission-oriented murderers suffer no break from reality and are not usually thought to suffer from psychosis (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Taylor et al., 2011). The crime scenes of mission-oriented murderers show planning and organization and they rarely leave behind physical evidence however they do show signs of consistency and control in the murder of their victims (Taylor et al., 2012). Typically, these murderers do not leave behind any murder weapon and do not take part in any

type of pre- or post-mortem acts with their victims (e.g., torture, dismemberment) (Canter & Wentink, 2004). Instead, the murder of their victims appears to be quick, usually involving methods such as bludgeoning, the cutting of the throat, or via the use of a firearm (Canter & Wentink, 2004).

Hedonistic

The hedonistic murderer is one who commits murder solely for the so called thrill of the kill (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Leyton, 2005). This type of murderer kills as a means of achieving a sense of pleasure or well-being, both of which can be achieved in a variety of ways (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Leyton, 2005; Taylor et al., 2012).

The hedonistic murderer can be broken down into two subtypes, the lust murderer and the thrill murderer, with each having its own specific set of characteristics (Canter & Wentink, 2004). The lust murderer kills mainly as a means of sexual gratification (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004) with sexual pleasure being the prime focus for their murderous act. Even after the death of the victim the lust killer will often mutilate the victim's body and engage in sadistic acts with it (Canter, 2004). These murderers derive sexual pleasure through vaginal rape, mutilation, multiple sex acts (usually before killing the victim), and/or torturing the victim before killing them (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004; Taylor et al., 2012). More specifically, these murderers often exert acts such as genital/facial/abdominal mutilation, and burning as a means of torture upon their victims, and take part in various postmortem acts which may include cannibalism, necrophilia and decapitation (Canter & Wentink, 2004).

Lust murderers seem to prefer skin-to-skin contact and therefore often kill at close range involving methods such as manual strangulation or by physically abusing the victim to the point of death (Canter & Wentink, 2004). Instead of being act focused murderers like the previous two categories, these murderers are process focused, meaning they take the time to consider the process of a victims murder (Taylor et al., 2012). As well, they are classified as organized due to crime scene evidence which suggests planning such as leaving behind minimal physical evidence, taking /disposing of the murder weapon, moving the body post murder, covering/concealing the body, or often using an isolated site to dispose of the body (Canter & Wentink, 2004; Taylor et al., 2012).

The thrill murderer obtains immense pleasure and excitement from the act of committing the murder itself (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004; Taylor et al., 2012). For these murderers the killing process is usually carried out over an extended period of time and often involves acts such as, biting, burning, restraining the victim, torture, exerting control (e.g., gagging, eliminating the ability to breath/talk/scream), manual and/or ligature strangulation along with vaginal rape and object penetration (Canter & Wentink, 2004; Taylor et al., 2012). For thrill murderers the gratification comes from committing such horrendous acts and not from the sexual contact which they may or may not choose to engage in with the victim (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Taylor et al., 2012).

These murderers are process focused as well. They thoroughly engage in the act of the murder itself and gain pleasure and excitement from exerting pain and suffering upon their victims (Canter & Wentink, 2004).They delay actually committing the murder as a means of

prolonging the pleasure which they obtain from watching the victim endure such torture and pain (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter &Wentink, 2004). For thrill murderers, the actual killing of the victim is only a small contributor to their overall excitement mainly because once the victim is dead, the murderer loses interest since they must then find a new victim in order to obtain pleasure and excitement once again (Canter & Wentink, 2004) Thrill murderers are classified as organized murderers as these murderers are careful not to leave behind a murder weapon and typically put careful thought into the location of the disposal site which is usually isolated (Canter & Wentink, 2004). They also take great care to cover and conceal the body and take great precautions due to the fact that they are aware of the consequences of getting caught (Canter & Wentink, 2004).

Power/Control

The power/control murderer gains pleasure through the power/control/domination they have over their victims (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004; Taylor et al., 2012).This type of murderer prefers skin-to-skin contact when murdering his victims making strangulation a very popular murder method (Taylor et al., 2012). The power/control murderer achieves control over his victim by using methods such as, gagging, vaginal rape, restraining, torture, physical abuse, burning, and/or tease cuts (tiny cuts on the body used as a means of torture, not murder) (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004; Taylor et al., 2012). This type of murderer desires power and control over the victim even after death (Canter & Wentink, 2004). The feeling of power/control/dominance over his victim is maintained postmortem through dismemberment, extirpation, and decapitation (Canter & Wentink, 2004; Taylor et al., 2012).

For power/control murderers, who are very process focused and organized, the longer the carrying out of the murder can be extended the more pleasure and gratification they achieve (Holmes & DeBurger, 1985; Holmes & Holmes, 2010; Canter & Wentink, 2004). This becomes evident based on things such as, leaving behind no murder weapon, tampering with evidence, moving the body postmortem, concealing/covering the body, and dumping the body in an isolated area (Canter &Wentink, 2004). For power/control murderers their drive for murder is motivated by a need for dominance which is only achieved through the life and death of their victims (Canter & Wentink, 2004; Leyton, 2005).

Using the typology described by Holmes and DeBurger (1985), the goal of the remainder of this paper is to use the motives and characteristics of each category and pair it with information obtained on five specific serial murderers and classify each murderer into the category which he belongs.

Classification

Based on the typology provided by Holmes and DeBurger (1985), a basic criterion was developed for each individual type (see table 1). This criterion was then applied to five serial murderers believed to be fairly popular among the media and literature. The criterion included seven variables: (1) organized/disorganized, this variable can be defined based on the information provided previously, (2) planned/spontaneous, drawing from the organized/disorganized description, this variable considers whether or not the murderer in question previously planned his murderous acts, (3) random/non-random and specific/non-

specific victims, this variable looked at whether or not the victims were chosen prior to the murder, or if they were chosen at random. As well, whether or not the victims fit a specific type, or if one differed vastly from the next; whether or not the murderer has a preference with regards to his victims. (4) act-focused/process-focused, whether the murderer was focused only on the act of murder itself, or the process of the murder as a whole, (5) dispersed/concentrated geographic location, victims were chosen from a variety of different locations, or from the same general location, (6) the method of murder, how the murderer preferred to murder his victims, and (7) sexual/non-sexual, whether or not the victim achieved some sort of sexual gratification from his murders.

It is important to recall the notion that this typology, or classification system, exists as a spectrum. That is, one type flows into the next. Therefore, one does not have to meet the exact criteria to fall into one category of the other. David Berkowitz, Gary Ridgway, Jeffrey Dahmer, Dennis Rader, and Ted Bundy were chosen and classified based on the criterion developed using the Holmes and DeBurger typology.

Visionary: David Berkowitz
Visionary murderers included the variables, disorganized, spontaneous, random/non-specific, act-focused, concentrated, non-specific method for murder, and non-sexual. Based on these variables, David Berkowitz (see figure 3), who is more commonly referred to as the Son of Sam, met 6 of the 7 variables included in the visionary criteria, and was therefore classified as a visionary murderer. Berkowitz was considered to be disorganized based on the fact that there was no planning involved in his murders, he would simply approach his victims, from behind or in face to face interactions and open fire (Samuels, 2012). He would just start shooting and hope he would hit and kill his target. He did not plan when these murders would occur and would instead kill when he was instructed to by the "demons" (Leyton, 2005). This also suggests spontaneity as no planning was involved in his acts of murder. Although Berkowitz was responsible for killing both men and women, he only shot men when they accompanied his female targets. Based on this information Berkowitz's victims are considered random but not

Holmes & DeBurger Typology Serial Killer	Organization: Organized / Disorganized	Planning: Planned / Spontaneous	Victims: Random / Non-Random Specific / Non-Specific	Focus: Act / Process	Geography: Dispersed / Concentrated	Murder Method: Bludgeon / Firearm / Strangulation / Torture / Non-Specific / Multiple	Sexual Motivation: Sexual / Non-Sexual
Visionary	Disorganized	Spontaneous	Random Non-Specific	Act	Concentrated	Non-Specific	Non-Sexual
Mission	Organized	Planned	Random Specific	Act	Concentrated	Multiple	Non-Sexual
Hedonistic (Lust)	Organized	Planned	Non-Random Specific	Process	Concentrated	Strangulation Torture	Sexual
Hedonistic (Thrill)	Organized	Planned	Random Specific	Process	Dispersed	Strangulation Torture	Sexual
Power/Control	Organized	Planned	Non-random Specific	Process	Dispersed	Strangulation Torture	Sexual
Berkowitz, David - Visionary (6/7)	Disorganized	_____	Random Non-Specific	Act	Concentrated	Fire Arm Use	Non-Sexual
Dahmer, Jeffrey - Lust (6/7)	Organized	Planned	Non-Random Specific	Process	_____	Strangulation	Sexual
Dennis Rader - Thrill (7/7)	Organized	Planned	Random Specific	Process	Dispersed	Strangulation + Torture	Sexual
Bundy, Ted - Power/Control (7/7)	Organized	Planned	Non-Random Specific	Process	Dispersed	Strangulation	Sexual
Ridgeway, Gary - Mission (5/7)	Organized	Planned	Specific	_____	Concentrated	Strangulation	_____

Figure 2.

non-specific as the victims chosen for him by the "demons" were largely female (Leyton, 2005; Samuels, 2012). Furthermore, Berkowitz was act focused since his only goal was to shoot and kill the individual whom the "demons" wanted dead (Leyton, 2005; Samuels, 2012). As well, Berkowitz killed within a concentrated area due to the fact that he shot 13 people, killing 6 and injuring 7 largely within the Queens area (Leyton, 2005; Samuels, 2012; Moynihan & Chan, 2007). As well, despite speculation, it was not found that Berkowitz achieved any type of sexual gratification from the murderers he committed.

Figure 3. David Berkowitz, the Son of Sam, Visionary murderer

In addition to meeting six of the seven variables included in the criterion that was set, Berkowitz also met some of the other characteristics suggested by Holmes and DeBurger (1985) to be associated with visionary murderers. Berkowitz reported feeling as though he was under the control of demons (Samuels, 2012) and claimed that a 6000 year old man, by the name of Sam, spoke to him through a pet dog (Leyton, 2005). These factors suggest the existence of mental illness, possibly psychosis although no information was found to suggest psychological

diagnosis of this disorder. As well, the Holmes and DeBurger typology suggests that visionary murderers kill in response to voices, or visions which command them to kill certain people, or groups of people and often choose these victims for the murderer. As previously stated, Berkowitz reported having been tormented by "demons" who instructed him when and who to kill. The typology also suggests that visionary murderers will make no attempt to hide the bodies of their victims but will instead leave them at the scene of the crime. This is true of the murders committed by Berkowitz as he would simply approach his victim, open fire, hope to have killed the victim, and flee the scene (Leyton, 2005; Samuels, 2012). Based on this information, it can be concluded that with regards to the criteria that was set, as well as additional characteristics suggested by the Holmes and DeBurger typology, David Berkowitz falls into the category of visionary murderers.

Mission-Oriented: Gary Ridgway

Mission-oriented murderers were defined by the variables, organized, planned, random/specific, act-focused, concentrated, multiple methods of murder, and non-sexual. Using these variables, Gary Ridgway (see figure 4), often referred to as the Green River Killer, was classified as a mission-oriented murderer as he fit 5 of the 7 variables that were set for mission-oriented murderers. Ridgway was considered to be an organized murderer based on the fact that he maintained employment as a truck painter, the murders began following his second divorce which is considered to be the stressor, and the fact that he would show his victims pictures of his son as a means of achieving their trust (Levi-Minzi & Shields, 2007). Ridgway also chose prostitutes from the same location, the SeaTac Strip, and dumped the bodies in and along the Green River, both areas he was familiar with (Levi-Minzi & Shields, 2007; White, Lester, Gentile, & Rosenbleeth, 2010). This, along with the presentation of his son's picture, suggested planning prior to the murder. He knew where he would go, the type of victim he would choose, and how he would get them to voluntarily leave with him. As well, specifically choosing prostitutes who worked the SeaTac Strip, tells us his victims were random but specific. This also suggests a concentrated geographic "hunting" ground. Finally, Ridgway would strangle his victims usually with some sort of makeshift ligature as he chose not to bring any tools along with him (Levi-Minzi & Shields, 2007).

Figure 4. Gary Ridgway, the Green River Killer, Mission-oriented murderer

Gary Ridgway also complied with other elements included in the mission-oriented category of the Holmes and DeBurger typology. The typology suggests that mission-oriented

murderers choose to rid the world of people/group. Ridgway possessed intense feelings of hatred toward prostitutes and eventually the hatred and anger were reflected through acts of murder (Levi-Minzi & Shields, 2007). As well, these murderers are reported to suffer no break from reality, and there no evidence was found to suggest Gary Ridgway suffered from psychosis. Based on these findings, it can be concluded that Gary Ridgway would be classified as a mission-oriented murderer. However, due to the fact that Ridgway took part in necrophilic acts with his victims' bodies (Levi-Minzi & Shields, 2007), and that strangulation was his preferred method of murder which differs slightly from the notion of a quick kill it can be proposed that while fitting the mission-oriented classification, perhaps Ridgway fits more on the end which flows into the hedonistic classification than in the middle of the mission-oriented classification which would result in his meeting all the criteria set for this type of murderer.

Hedonistic (Lust): Jeffrey Dahmer

Hedonistic murderers were subcategorized into lust murderers and thrill murderers as in the typology provided by Holmes and DeBurger. Lust murderers were described using the variables, organized, planned, non-random/specific, process-focused, concentrated, using strangulation and torture as common methods of murder, and sexual. These variables were used to classify Jeffrey Dahmer (see figure 5) as a lust murderer due to the fact that he met 6 of the 7 variable included in the criteria set for lust murderers. Dahmer was considered to be organized based on factors such as, his apartment was kept clean/maintained and it was relatively odorless (Jentzen, Palermo, Johnson, Ho, Stormo & Teggatz, 1994), the killing took place in his own apartment (Martens & Palermo, 2005; Jentzen et al., 1994; Silva, Ferrari, & Leong, 2002), previous purchase of materials/equipment required for the murders (Jentzen et al., 1994), and the dismemberment and dissection of his victims (Martens & Palermo, 2005; et al., 1994; Silva et al., 2002). The previous purchase of materials and equipment, multiple locks on the apartment door, and the presence of surveillance equipment all suggest planning prior to the murder (Martens & Palermo, 2005; Jentzen et al., 1994; Silva et al., 2002). The acts of dissection and dismemberment, as well as photographic records of the victims and murders indicate that Dahmer was process-focused. Dahmer was responsible for the death of 16 males, each reported to have similar craniofacial features (Martens & Palermo, 2002; Jentzen et al., 1994). This indicates that Dahmer's victims fit a specific type. As well, Dahmer's preferred method of murder was strangulation following the rendering of victims unconscious by using some chemical mixture (Jentzen et al., 1994) which is consistent with the criteria used for classification. Finally, Dahmer took part in sexual intercourse as well as other sexual acts with his victims both pre- and post-mortem (Jentzen et al., 1994).

Figure 5. Jeffrey Dahmer, Hedonistic (Lust) Murderer

Jeffrey Dahmer met several of the other characteristics set by the Holmes and DeBurger typology. The typology states that even after the death of the victim the lust murderer will continue to use his/her body. Dahmer took pictures of his victims as well as the dissection and dismemberment process so he could relive it later, he practiced necrophilia with his victims corpses, kept heads and sections of skin and muscle tissue in his freezer, genitals in a pot, and skulls in numerous areas of his apartment (Martens & Palermo, 2005; Jentzen et al., 1994; Silva et al., 2002). Based on the evidence provided the conclusion can be drawn that Jeffrey Dahmer fits the description, and can therefore be classified as a hedonistic, lust murderer.

Hedonistic (Thrill): Dennis Rader

Thrill murderers included the variables, organized, planned, random/specific, process-focused, dispersed, strangulation and torture were often used as methods of murder, and sexual. Through the application of these variables, Dennis Rader (see figure 6), who is also known as the BTK Killer, was classified as a thrill murderer and basically met all 7 criteria. Rader was deemed an organized murderer based on evidence with suggested me maintained various means employment, had a family (only as a charade), was a member of the Christ Lutheran Church, and planned his offenses (Holmes & Holmes, 2010; Moffatt, 2008). It is clear that Rader planned the murders he committed due to the fact that he made a point to bring along a murder weapon as well as a backup weapon, to stalk victims and learn their habits prior to murder, to break into the homes of his victims and wait for them to arrive, and drew pictures to illustrate what he planned to do to particular victims (Holmes & Holmes, 2010; Moffatt, 2008). Rader's victims can be deemed random and non-specific, due to the fact that he killed men, women, and children (random) who he specifically targeted (Moffatt, 2008). As well, Rader is considered to be process-focused since he kept photographs of his victims, collected possessions and underwear belonging to his victims, documented in detail his murders, the victims and his activities, and

invested much energy and planning in the torture and murder of those he chose to be his victims

Figure 6. Dennis Rader, BTK Killer, Hedonsitic (Thrill) Murderer

 (Moffatt, 2008). Rader murdered in various locations (Moffatt, 2008), which indicates dispersion. Also, he preferred to strangle and torture his victims, with strangulation (used plastic bags, belts, rope, his hands) being his main method of murder. And finally, for Rader, murder was sexual. In fact, he received sexual gratification, and would masturbate, to the sight of his victims dying and later their dead corpses (Moffatt, 2008).

In addition, to the seven criteria which was set, Rader also matched additional characteristics that were suggested by the Holmes and DeBurger typology. This typology reported that murders often occur over an extended period of time, and may involve controlling acts. Rader enjoyed tying up his victims prior to killing his victims and staying with them for various periods of time (Moffatt, 2008). As well, it was stated that the murderer would feel pleasure and excitement through the killing of his victims. Rader enjoyed strangling his victims only to the point of unconsciousness and then reviving them only to do this over and over as to prolong the enjoyment of the kill, until finally the victim would die (Holmes & Holmes, 2010). It was also stated that once the victim died the murderer would lose interest and seek a new victim in order to achieve pleasure and gratification again. This was true of Rader, unlike Ridgway and Dahmer, post-mortem engagement with victims was not something he practiced. Rather once the victim or victims were dead, his excitement ended (Moffatt, 2008). Therefore, based on the information provided, it can be concluded that Dennis Rader can be neatly categorized as a thrill murderer.

Power/Control: Ted Bundy

Lastly, power/control murderers were defined by the variables, organized, planned, non-random/specific, process-focused, dispersed, strangulation and torture commonly used as methods of murder, and sexual. Based on these variables, Ted Bundy (see figure 7) was classified as a power/control murderer. Bundy has been repeatedly characterized as being very intelligent, sociable and well liked, and when not attending university as a law student, Bundy maintained employment at a crisis center (Leyton, 2005; Lachmann & Lachmann, 1995). As well, Bundy planned his offenses and has been reported to have gained the attention of his

victims by feigning some type of injury, most commonly a broken/sprained leg or arm, or by posing as an authority figure (Leyton, 2005; Lachmann & Lachmann, 1995). Each of these suggests that Bundy was an organized murderer. In addition to being organized, the use of a ruse to gain victims attention, along with preforming this ruse on various college campuses, abducting and holding his victims for various periods of time, and the act of applying handcuff or rendering victims unconscious as a means of gaining control (Leyton, 2005; Lachmann & Lachmann, 1995), all suggest significant planning prior to the act of murder. Bundy's victims were non-random and specific. The majority of these victims were abducted from various college campuses (Leyton, 2005; Lachmann & Lachmann, 1995). He tended to target young, attractive, long-haired women, who had an upper-middle class appearance and commonly resembled his first love that rejected him (Leyton, 2005; Lachmann & Lachmann, 1995). Bundy is considered to be process-focused. This is indicated by the fact that he would keep his victims, dead or alive, at a private place, and sexually abuse them for as long as he felt secure (Leyton, 2005). In addition to this, he would also reapply their make-up and/or shampoo their hair (Leyton, 2005). As well, if his victims were still alive when he was finished with them, he would murder them and dispose of their bodies in numerous locations (Leyton, 2005). Although the majority of Bundy's victims were abducted from college campuses, they were targeted from a variety of different campuses and the disposal sites were various also (Leyton, 2005). With regards to method of murder, strangulation seemed to be the most common, Bundy even resorted using the victims own stockings as a ligature from time to time (Leyton, 2005). In addition to strangulation, it was not uncommon for Bundy to cut the throats of his victims either pre- or post-mortem. The murders committed by Bundy were also very sexual in that he was known to inflict genital mutilation upon the bodies of his victims, and also he would engage in sexual activity with his victims both pre- and post-mortem (Leyton, 2005; Lachmann & Lachmann, 1995).

Figure 7. Ted Bundy, Power/Control Murderer

Furthermore, Bundy also emulated additional characteristics which were presented in the Holmes and DeBurger typology. The typology suggests that power/control murderers prefer skin-to-skin contact with their victims; this was true of Bundy as he preferred to manually strangle his victims. Also, these murderers are reported to gain pleasure through the power and control they have over the victim even after death. Bundy would apply handcuffs or render his victims unconscious to gain control over them and maintained this control post-mortem by

mutilating their genitals and taking part in sexual activity with the corpse. Based on this information the conclusion can be made that Ted Bundy falls into the power/control classification.

Conclusion

      Serial murder is a common phenomenon among today's society. However, among the literature, the actual classifying of serial murderers in particular, is rare. Other than the classifications made by Holmes and DeBurger in their 1985 typology, it is rare to find anything in the literature to suggest that a particular serial murderer belongs in a specific category. Considering the general make up of serial murderers it should be quite obvious that although serial murderers may share similarities or differ somewhat on the characteristics they possess (e.g., age, intelligence, personality, psychopathic traits/tendencies, childhood, etc.) the basic motives can be used as a means of classifying serial murderers in to appropriate categories. As emphasized through the work of this paper, seven variables were derived using the Holmes and DeBurger typology. These variables were used to categorize five serial murderers into the category which they belonged based on information describing the basis for their motives. The variables were then applied to five specific serial murderers: David Berkowitz, Gary Ridgway, Jeffrey Dahmer, Dennis Rader, and Ted Bundy. How many variables the murderer met was then assessed and from this it was determined to which category he fit most appropriately. After the final assessment of each serial murderer and the variables which applied to him it was found that each serial murderer could be generally classified into one of the five categories. However, it is important to recall that this typology exists on a spectrum, that is one category flows into the next. Therefore, despite being classified into one group or another, this does not mean that the serial murderer fit each variable perfectly. A serial murderer was classified into the category which he fit at least five of the seven variables that were set for that particular category. As a result, David Berkowitz was classified into the visionary category, Gary Ridgway as mission-oriented, Jeffrey Dahmer as a lust murderer, Dennis Rader as a thrill murderer, and Ted Bundy was found to belong within the power/control category. Therefore suggesting that it is in fact possible to implement the Holmes and DeBurger typology and classify serial murderers into one of the five defined categories.

      It is important to note that although this paper suggests that it is possible to categorize serial killers, this is not done based upon the characteristics of the individual. Therefore, this paper does not suggest or support the use of criminal profiling. What this paper aimed to do, was use the behavior and motives of serial murderers to classify them into one of the five categories in the Holmes and DeBurger typology. This paper does not suggest that a crime scene, or murder can be analyzed and used to determine the color hair, type of car, or mean of employment of the individual who committed the murder as has been popularized on prime time tv. Instead this paper is suggesting that by taking any given serial murderer and assessing the motives and behaviors associated with him, he can be classified into one of five categories existing on a spectrum.

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The Harmful Truth: Psychological and Behavioral Consequences of Child Abuse

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Abstract

Child maltreatment is a serious issue that has long lasting effects on an individual. Child sexual abuse (CSA) and child physical abuse (CPA) have many long-term effects. CSA occurs when a youth or adult uses a child for sexual purposes, and CPA occurs when an individual uses force to harm a child (Pozzulo et al, 2012). This paper examines the long-term psychological and behavioral consequences of these two types of abuse in hopes to discover the similarities and differences between the two forms of maltreatment. It also looks at the contributing factors to child abuse such as socio-economic status, gender of victim, and severity of assault. The paper also looks at types of perpetrators and possible treatments for child abuse. It was found that there are many common similarities between the psychological and behavioral consequences of the two types of abuse.

Each year, there are far too many children who undergo some form of maltreatment. Child maltreatment is defined as acts of commission or omission by parents or caregivers that result in potential harm to a child's health (Coelho, Walss-Bass, & Brietzke, 2014).Whether it occurs within a family or outside of a family, child maltreatment is a serious issue that affects the well-being of children which often lingers with them into adulthood. Childhood maltreatment is linked to a variety of problems in adulthood such as behavioral strategies (i.e., substance abuse), psychological responses (i.e., depression), and subsequent secondary stressors (i.e., interpersonal problems) (Min, Minnes, Kim, & Singer, 2013). Further, the consequences of child maltreatment can impair the development of emotional self-regulation, empathy, self-concept, social skills, and academic motivation (Berk, 2014) and has been shown to lead to a conflict in self-regulation and secure attachment within adults. This in turn can subsequently interfere with a child's development (Dunn, McLaughlin, Slopen, Rosand, & Smoller, 2013).

This literature review will compare the psychological and behavioral consequences of child sexual abuse and child physical abuse in hopes to determine if there are differences between CSA and CPA on psychological and behavioral levels. It will also examine the gender differences that exist in abuse consequences, the influence of abuse severity, and the possible role that socio-economic status plays in the abuse cycle. Additionally, in order to further understand the consequences of child abuse, it is important to examine abuser characteristics. Lastly, this review will examine two different types of treatment for child abuse as this is critical in helping the victim cope with the trauma.

Child abuse, a subcategory/synonym of child maltreatment, is a term that society is appalled by, yet there are still thousands of cases of occurrence each year. In 2010, there were 18,710 children and youth under the age of 18 that were victims of family violence here in Canada alone (Sinha, 2010). Further and unfortunately, this is only the number of police reports and since many cases of child abuse go unreported the number of cases is almost certainly substantially higher. How a child is treated early in life influences his or her growing self-awareness which ultimately shapes the individual of who he or she will become (Briere & Elliot,

1994). Only a small minority, 10%-28%, of individuals who experience some form of maltreatment will not experience any related psychological distress (Briere & Elliot, 1994).

Children who have been abused have problems with attachment. Bowlby (1969) proposed a theory of attachment which examined the infant's emotional tie to the caregiver (Berk, 2014). The proposed ideal form of attachment is known as secure attachment, a pattern characterizing infants who use the parent as a secure base. When a parent leaves, the child becomes upset but eventually calms down and is happy when he or she sees the parent again (Berk, 2014). Children initially begin their lives as securely attached to their parents until something occurs to change the security. The caregiving a child receives is a crucial component in development and if a child receives inadequate caregiving, the child will be more likely to have disruptions in attachment. If a child experiences abuse and/or neglect, he or she is more likely to develop an insecure attachment. There are three types of insecure attachment; however it is common for maltreated children to have a highly disorganized/disoriented attachment (Berk, 2014). Disorganized/disoriented attachment refers to an attachment pattern reflecting the greatest insecurity. The infants typically show confused, contradictory responses when reunited with a parent after separation (Berk, 2014). When a child shows disorganized attachment to a parent, it does not necessarily mean that it is the parent who is inflicting the abuse. However, a child who has experienced abuse will likely develop this form of attachment to the caregiver because the child develops distrust in others after abuse.

Two serious and troubling forms of maltreatment are child sexual abuse (CSA) and child physical abuse (CPA). CSA and CPA frequently lead to both psychological and behavioral consequences that manifest in both short-term and long-term risks. Sexual abuse varies on a number of dimensions including the act, the perpetrator, and frequency of abuse. Child Sexual Abuse occurs when an adult or youth uses a child for sexual purposes including fondling, intercourse, incest, sodomy, exhibitionism, and exploitation through pornographic materials (Pozzulo, Bennell, & Forth, 2012). A worldwide problem that affects children of all ages, ethnicities, and socio-economic backgrounds (Canton-Cortes & Cortes, 2012),CSA is believed to be two to three times more common in females (Fergusson & Mullen, 1999), but this may be due to the underreporting of CSA in male victims. Although there is much information provided to the public how much damage CSA can do to an individual, it is still on the rise here in Canada. In 2011, Canadian police reported 3,800 incidents of sexual violations against children which was an increase of 3% from the previous year (Statistics Canada, 2012).

When a child is initially sexually abused, there are several short-term effects that may occur. This includes, but not limited to, behavioral problems (e.g., aggression), low self-esteem, inappropriate sexuality, symptoms consistent with post-traumatic stress disorder (PTSD), sleep disturbance, eating disorders, stomach problems, and headaches (Pozzulo et al, 2012). It is frightening to think that sexual abuse amongst children can be difficult to detect since it often occurs in a private setting. It is estimated that one third of sexually abused children do not show any psychological symptoms or only show non-specific symptoms of abuse post-assault (Malhorta & Biswas, 2006).

CPA results in short-term and long-term consequences. CPA is defined as the deliberate application of force to any part of a child's body that results or could predictably result in an injury. It may include shaking, choking, biting, kicking, burning, or poisoning (Pozzulo et al, 2012) and in 2008 there were an estimated 18,688 cases of CPA under investigation here in Canada (Jud & Trocme, 2011). In the United States, 19% of their maltreatment cases were in relation to physical abuse (Runyon, Deblinger, Ryan, & Thakkar-Kolar, 2004).

Like sexual abuse, CPA has a negative effect on children in both the short-term and the long-term in many psychological, behavioral, and interpersonal facets. When a child is subjected to physical abuse, short-term symptoms can include, but not limited to, greater perceptual-motor deficits (e.g., difficulty judging distances), lower intellectual functioning, lower academic achievement, aggression, and internalizing mental health difficulties such as hopelessness and depression (Pozzulo et al, 2012). An association has also been shown between CPA and PTSD. Further short-term consequences also include nightmares, intrusive thoughts, recurrent memories, hypersensitivity, anxiety, and anger outbursts (Runyon et al, 2004).

Evidently, CSA and CPA are serious and more prevalent than we would like to admit. The remainder of this paper examines and compares the long-term consequences of CSA and CPA to investigate the impacts of the abuse on behavior, mental health, and social abilities. Although the short-term effects of child abuse will not be specifically examined further they are damaging enough in and of themselves and are often carried into adulthood becoming long term issues.

Long-Term Psychological Consequences of CSA

CSA victims generally have poor psychological adjustment in adulthood (Canton-Cortes & Cortes, 2012). It can lead to cognitive distortions of the self with an individual exhibiting low self-esteem, a sense of hopelessness/helplessness, self-hatred, and interpersonal problems (Malhortra & Biswas, 2006). An individual often feels helplessness because he or she was unable to prevent the abuse and many times, unfortunately, it is likely that the victim thought the abuse was a form of punishment for his or her badness (Briere & Elliot, 1994). Psychiatric illnesses are a major outcome of CSA with depression, anxiety, suicidal tendencies, hysterical reactions, sexual problems, and borderline personality disorder being commonly reported (Malhortra & Biswas, 2006). Depression, not surprisingly so perhaps, is the most common psychological consequence of CSA and adults with a history of CSA have a four times greater life-time risk of depression compared to adults without a history of CSA (Briere & Elliott, 1994). A CSA victim is also five times more likely to have one or more of the following: generalized anxiety disorder, phobias, panic disorder, and obsessive compulsive disorder. The anxiety that victims of CSA experience may negatively impact their relationships into adulthood (Briere & Elliott, 1994). Adults who do have relationships may report fear and/or anxiety during sexual contact because there is an association between sexual stimuli and the invasion of pain from their childhood (Briere & Elliott, 1994). Further, CSA survivors often experience neurobiological dysregulation, such as reduced hippocampal volume which in turn often results in the development of post-traumatic stress disorder (PTSD), an enduring disorder that occurs in reaction to a highly distressing, psychologically disruptive events (Pozzulo et al, 2012). Although most individuals do not reach the diagnostic criteria of PTSD, more than 80% will experience symptoms (Briere & Elliot, 1994). Lastly, adult survivors of CSA are more likely to be abused as adults (Puzzulo et al, 2012).

Long-Term Behavioral Consequences of CSA

Adult survivors of CSA often experience dysfunctions of behavior, predominantly sexualized behavior (Pozzulo et al, 2012). Children who have experienced CSA, experience behaviors they cannot comprehend and therefore cannot give consent to the sexual activity (Ahmad, 2006). Sex is not supposed to make sense to children, so when CSA is present it is no wonder that he or she may experience dysfunctional behavior into adolescence and adulthood.

Psychosexual dysfunctional behaviors can occur in adulthood because of CSA, including, but not limited to, intimacy disturbances and impairment of sexual pleasure (Ahmad, 2006). Behavioral consequences vary widely and how they manifest will depend on the age of the victim, when the abuse occurred, the physical acts performed toward the child by the perpetrator, a fear of retribution and culpability, the chronicity of acts, the child's resilience, and the victim/perpetrator relationship (Malhortra & Biswas, 2006). A lot of victims of CSA turn to substance abuse to cope with the psychological trauma they experienced as children or as an attempt to self-medicate for depression, anxiety, or PTSD (Briere & Elliott, 1994). One study indicated that as much as 80% of male victims have reported substance abuse problems (Lisak, 1994). Studies have not only found patterns of substance abuse in males as female survivors are ten times more likely to have a history of drug addiction compared to their non-abused peers (Briere & Elliott, 1994). Suicide is another common behavioral consequence of CSA since victims feel that it is a form of escape from their psychological problems. Adults who were sexually abused exhibit more frequent suicide behavior and greater suicidal ideation (Briere & Elliott, 1994).

Long-Term Psychological Consequences of CPA

CPA does more than leave cuts and bruises on a child's body; it also leaves them with psychological difficulties in which one has to cope with throughout his or her life. CPA can lead to a variety of psychological maladjustment into adulthood and has been linked to a variety of problems post-trauma including somatization, anxiety, depression, hostility, paranoid ideation, psychosis, and dissociation (Malinosky-Rummell & Hansen, 1993). It has been found that adults who experienced physical abuse as children have higher levels of depression and a lack of personal control and emotional support (Pitzer & Fingerman, 2010). These are serious problems which negatively impact the way in which the child develops CPA victims are reported to experience negative feelings about interpersonal reactions with others such as feeling shy, self-conscious, and misunderstood. These individuals likely have difficulty forming healthy relationships compared to non-abused individuals (Malinosky-Rummell & Hansen, 1993). Close relationships are important for happiness and life satisfaction and is beneficial for those who have experienced some form of suffering (Pitzer & Fingerman, 2010). This research suggests that if it is important to have close relationships for happiness, then many individuals who have experienced CPA are likely to be less happy than those who have not experienced CPA.

Long-Term Behavioral Consequences of CPA

The long-term behavioral consequences of child physical abuse have been studied thoroughly as behavioral aspects after CPA are common. Physical abuse increases the likelihood of perpetrating physical abuse onto others (Pozzulo et al, 2012) and the majority of long-term consequences revolve around aggressive and violent behaviors. Since the trauma of CPA is caused by painful and potentially life threatening aggression, it is perhaps not surprising that victims of physical abuse are more likely to be aggressive (Malinosky-Rummell & Hansen, 1993). Adolescents who have higher rates of maltreatment exhibit more violent behaviors and these behaviors progress into adulthood (Malinosky-Rummell & Hansen, 1993). Malinosky-Rummell and Hansen (1993) showed that physically abused adult male alcoholics demonstrated more legal difficulties (such as bar brawls) and violence against authority figures compared to non-abused males. A positive correlation has been shown between parental aggression levels towards children and the victim's commission of violent criminal behavior, particularly a

significant amount of aggression towards personal crimes such as assault, rape, and murder (Malinosky-Rummell & Hansen, 1993). This study also revealed that violent inmates report higher rates of CPA than do non-violent inmates. Individuals with a history of physical abuse were also rated more likely to be abusive in romantic relationships and towards children.

It is evident that individuals who experienced CPA are more likely to be aggressive towards others, and it is questionable why this would occur if the individual understands the brutality of CPA. Social learning theory may help to explain this transference from parent to child (Bandura, 1973). Social learning theory proposes that we learn through observation, imitation, and modeling leading victims of CPA to repeat the aggressive behavior expressed by their abuser (Renner, 2012).

Not only do people with a history of CPA have aggression problems, they are also more likely to have substance abuse problems. Compared to non-abused people, CPA victims reported that alcohol had a stronger impact on their lifestyle, activities, and social interactions. Further, this substance abuse occurred at a younger age (Malinosky-Rummell & Hansen, 1993). and it increases the chances of alcohol abuse by up to 30% (Shin et al, 2013).

Factors Contributing to the Consequences of Child Abuse

There are several factors that contribute to the psychological and behavioral consequences of child abuse. Some of these include the socio-economic status of the child and his or her family, the differences between male and female victims, and the severity of the assault.

Socio-economic Status (SES)

Unemployment is an economic stressor that can lead to the likelihood of child abuse. There have been several studies suggesting that there is an association between parental employment status and abuse. Results suggested that children of unemployed parents are more likely to experience abuse than their peers. With that said, parental employment alone does not prevent abuse since occurrences of abuse are found across all socioeconomic levels, although it is most frequently seen in children of low SES. With this said, it is possible that the higher rates of abuse in lower SES is a result of higher rates of social services and child welfare interventions and therefore child abuse is more likely to be reported (Briggs & Hawkins, 1996). One study reported that unemployed mothers were significantly more likely to physically and emotionally abuse their children, whereas fathers were significantly more likely to physically abuse their children (Tobey, McAuliff, & Rocha, 2013). Because of the daily stresses and little social support families of low SES, it is more common that children who grow up in this type of environment will move away from secure attachment and towards a more insecure attachement (Berk, 2014). *Gender Differences*

In a longitudinal study by Harriet MacMillian and his team, there was a higher level of abuse reported amongst males (33.7%) compared to females (28.2%). However, it has also been reported that child sexual abuse was more common among females (22.1%) compared to males (8.3%) (Macmillan, Tanaka, Duku, Vaillancourt, & Boyle, 2013). Gold et al., found no significant differences between males and females concerning abuse involving intercourse or the penetration of objects but found that females were more likely to be sexually abused by a family member than were males. However, both male and female victims reported that 96-97% of the abuse was from a male perpetrator (Gold, Elhai, Lucenko, Swingle, & Hughes, 1998). Lisak (1994) conducted interviews with male survivors of CSA and these abused men scored higher on

levels of depression, anxiety, obsessive-compulsiveness, dissociation, hostility, low self-esteem, impaired relationships, and suicide attempts. Men reported feeling an alienation from others in life which in turn reduced their confidence and reported that the abuse was a violation which caused a sense of abandonment and increased their levels of anger. Fassler, Amodeo, Griffin, Clay, and Ellis (2005) studied women who were sexually abused and indicated that women who were abused experienced a greater level of psychological distress compared to women without. Predictably, women who had multiple perpetrators had greater psychological damage in adulthood (Fassler, Amodeo, Griffin, Clay, & Ellis, 2005).

Severity of Assault

Several studies have shown that an increased severity of abuse will lead to additional long-term difficulties. Evans, Steel, and DiLillo (2013) found that women endured more severe CSA than men, but men endured more severe CPA than women. They also indicated that CPA resulted in greater physical harm has been linked to more psychotic symptoms in adulthood. They also found that penetration was the most common link to PTSD (Evans et al, 2013). Overall the results suggest that if an individual has endured more severe forms of maltreatment, he or she will have a higher level, or higher number, of symptoms.

Types of Perpetrators

When looking at child abuse, it is important to recognize the differences between perpetrators. For CSA, there are a number of terms used to describe different perpetrators. A common term used for perpetrators of CSA is a child molester which can be categorized as an Intra-familial molester, meaning the child belongs to the family of the perpetrator, or an extra-familial molester, meaning the child is not a family member of the perpetrator (Pozzulo et al, 2012). Known as a pedophile, a fixated child molester has a primary sexual orientation towards children, and his or her interest in children as sexual objects typically begins in adolescence and continues throughout adulthood (Pozzulo et al, 2012). Child molesters can be any age over 16 and can be either gender with reports in Canada indicating that as much as 30-50% of CSA was committed by adolescents with many of the abusers once being victims of CSA themselves (Pozzulo et al, 2012). It is difficult to determine just how many females sexually abuse children but in Canada, only 2-5% of incarcerated females are sex offenders, although this is not to say that women do not sexually abuse children, it is just less commonly reported (Pozzulo et al, 2012).

As for CPA, the perpetrator is almost always a family member. These individuals lack parenting skills, have stress-related difficulties, are likely to experience depression, have substance abuse problems, and have low SES. A possible reason why parents are often the perpetrator in CPA is due to poor parent-child interactions along with a lack of problem-solving skills, and a more negative outlook leading them to unnecessarily interpret the child's behavior negatively (Runyon et al, 2004).

Treatment for Child Abuse

Although child abuse is horrific for victims to remember and live with for the rest of their lives, there are ways to deal with the aftermath of abuse to better the individual's future. There is no standard way to treat victims of child abuse because each case of abuse varies of type of abuse, its severity, and the victim. Without treatment a child can escalate in emotional problems

which can lead to re-victimization (Runyon et al, 2004). However, it has been found that social support groups can help survivors who have experienced abuse in childhood. Social support not only lessens the long-term impacts of maltreatment, it can also help victims with the cognitive and emotional processing of the abuse which allows victims to reevaluate the situation in a more adaptive manner (Evans et al, 2013). This is not to say that an individual will accept what has happened to him or her, but social support will help with the psychological and behavioral symptoms that are experienced. However, it has been found that men generally seek less social support than do women possibly because they receive less psychological benefit from the group session than the women (Evans et al, 2013). Intervention programs are also known to be useful for victims of child abuse. Intervention therapy can provide the individual with skills of learning to cope with stressors and challenges in a setting in order to maximize his or her opportunities in life (Fantuzzo, Weiss, & Coolahan, 1998). It has also been noted that interventions for child abuse is best approached in some type of group setting and should include the individual, family, researchers, and community partners especially since it has been found that isolated treatment methods are more likely to be ineffective (Fantuzzo et al, 1998).

Treatment of child abuse does not only involve the victims of the abuse, it involves the parents as well. Cognitive behavioral therapy has been shown to be effective in treating punitive parents. The cognitive restructuring helps in correctly interpreting a child's behavior and recognizing their own negative biases towards the child (Runyon et al, 2004). Further, instruction in communication skills and behavior management skills for the parents, assist in creating healthy interactions with children which should in turn decrease the child's behavioral issues (Runyon et al, 2004). However, it is difficult to educate persons who abuse children if they do not want the help, if the abuse goes unrecognized, or if the family has a lower socio-economic status because they may not be able to afford the program treatment.

Conclusion

To conclude, child maltreatment of any kind is harmful to the well-being of a child and it affects who he or she will become as his or her life progresses into adolescence and adulthood. Although there is a small minority of victims who turn out resilient to the abuse, the majority of CSA and CPA victims grow up with psychological and behavioral consequences of the abuse. This literature compared the differences between two very different types of abuse, CSA and CPA. However, it is conclusive that the psychological and behavioral consequences of CSA and CPA had many similarities suggesting that all forms of child abuse are harmful and usually lead to risky behaviors by the victim. When considering psychological consequences, CSA and CPA result in negative perceptions of the self and various mental illnesses. This often leads to trust issues and difficulty forming healthy relationships into adulthood. There are also many similarities of behavioral consequences between CSA and CPA. Adults who were abused as children are likely to engage in substance abuse in an attempt to cope with the pain of the abuse. Although CSA and CPA had extreme anger issues, it was found that CPA victims were more likely to be aggressive towards others, not just anger with the self. An individual who experienced CSA are likely to have suicidal ideation or attempted suicides. CSA adult survivors also had many physical health risks. CPA adult survivors often disobey authority figures and are more likely to be abusive towards others, including romantic partners.

When considering the factors contributing to child abuse, it was found that the SES of a family does influence the occurrence of child abuse as it is an addition stressor, an economic stressor, and much of abuse is a consequence of stress. There were not many differences between

gender of victims other than females are more likely to have experienced CSA and males are more likely to have experienced CPA. There were also similar findings in the severity of the assault, women have greater severity of CSA and men have greater severity of CPA. This concludes that although child abuse can happen to anyone, these factors play a greater role in CSA and CPA. The perpetrators of abuse can basically be anyone. They can be male or female, family members, non-family members, adolescents or adults. It is important to remember that potentially anyone can abuse children to diminish the stereotype of it being an adult male who abused the child. It was found that there are various treatments for child abuse, but there is no ideal treatment for child abuse because each individual must be treated differently depending on the type and severity of abuse.

This concludes that child abuse is harmful psychologically and behaviorally for the long-term of an individual's life. The awareness of child abuse is important for all of society to recognize because it shows people the harmful truth of child abuse.

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Music is truly universal. Music, in its many forms, is able to trigger a wide variety of emotions and reactions, from excitement to relaxation, happiness to sadness, fear to comfort (Chanda & Levitin, 2013). Some use music in the same way they might use caffeine; to stimulate arousal and regulate mood (Chanda & Levitin, 2013). Others use music to promote and enhance concentration, to coordinate movement and promote cooperation, to improve attention and diligence, to increase stamina and motivation, and to relieve stress and tension (Chanda & Levitin, 2013).

Music has a long history of application in health care. The use of music 'as medicine' occurred in pre-industrial and tribal-based societies (Chanda & Levitin, 2013). Music has been used in medical practices dating as far back as sixth century BC, with Egyptian hieroglyphics portraying music used with incantations to treat depression, anxiety, sleep disorders, and pain (Guetin et al., 2012). Even the Old Testament credited music as the reason for the end of King Saul's depression (Guetin et al., 2012). In Ancient Greece, Plato noted in *The Republic* that a musical education can be considered a component of mental hygiene; with music as medicine for the soul (Guetin et al., 2012).

In modern society, music is used to facilitate healing and well-being within health care settings. There are many different uses for music in today's health care system, such as pain relief or management, relaxation, psychotherapy, and for personal growth and development (Chanda & Levitin, 2013). There is increasing evidence-based literature indicating that music can help improve health through neurochemical changes that relate to reward, motivation pleasure, stress, arousal, immunity, and social affiliation (Chanda & Levitin, 2013). With advances in medical technologies, researchers are now able to develop a more thorough understanding of the neurological reactions in the perception of music. Morphological imaging shows that music creates permanent and constant interactions between the left and right hemispheres of the brain (Guetin et al., 2012). It has also been shown that listening to music triggers activities within a variety of areas of the brain that are responsible for cognitive, sensorimotor, and emotional processing (Guetin et al., 2012).

As music is able to initiate many changes within the brain it follows that these changes can have a positive effect on an individual. When considering how music can contribute to quality of life, it is important to recognize Rudd's (1997) four key aspects. First, music can make people more aware of their emotions. Listening to music can trigger emotions, both positive and negative, that they may not have felt for quite some time. Second, music can be used to develop agency and empowerment. This means that music may be able to encourage people to take responsibility for things that they have done or experienced in their lives. Third, music can create a sense of belonging and build social networks. Music is able to bring people together to connect in ways they may not have been able to before. Individuals may find common meanings within a song or have similar emotions arise and thus communication between them will grow, developing into new relationships. Finally, music can help individuals find meaning in life. For example, using music as a type of therapy for people living with a serious illness can help them

regain their idea of the meaning of life. This means that people who are living with a serious illness may listen to music and be able to see that there is more to their lives than their illness.

Music has proven to have many benefits when it comes to therapeutic practices within a medical or health care setting (Paul & Ramsey, 2000). Even though most people are not musically inclined, they do experience a great deal of satisfaction and enjoyment from listening to music (Paul & Ramsey, 2000). Depending on the type of music selected, the cardiovascular system could either be stimulated or calmed (Guzzeta, 1989). The type of music chosen can be a crucial determining factor of how effective it is for the individual. If the person is able to listen to music that he or she prefers, it is proven to be more effective and is also more likely to promote participation in rehabilitation exercises and activities (Sandness, 1995). Music that is preferred by the individual can make him or her feel more secure in a hospital or rehabilitation center (Paul & Ramsey, 2000). Tempo and rate of the music also need to be taken into consideration when choosing music for therapeutic reasons because even though it is proven that the person's favorite style of music is most effective, sometimes it is not appropriate for certain situations. The beat of the music needs to be suited not only to the rate of the activity, but also the specific parts of the therapeutic exercise (Sandness, 1995).

Music can be used in health care settings in two ways: receptive use of music, exclusively listening to music with no formal therapeutic objectives; and music therapy. Music therapy is defined as "the use of music and/or its elements (sound, rhythm, melody, and harmony) by a qualified music therapist, with a client or group, designed to facilitate and promote communication, relationships, learning, mobilization, expression, organization, and other relevant therapeutic objectives in order to meet any physical, emotional, mental, social and cognitive needs" (Guetin et al., 2012, p. 621). Music therapy uses clinical and evidence-based interventions to help individuals achieve personal goals within the areas of wellness, stress management, distraction from reality, pain relief, expression of feelings, memory stimulation, better communication skills, and physical rehabilitation (Mahon & Mahon, 2011)

The literature reviewed indicates the beneficial qualities of music in health care settings. Music can be used in rehabilitation as a supplement with physical therapy for individuals with a multitude of different disabilities, such as people who have experienced stroke or people with Parkinson's disease. Music can also be used as a therapeutic method for people living with Alzheimer's type dementia or undergoing treatment for cancer. Finally, music is used with a variety of medical procedures to help reduce stress and anxiety.

Rehabilitation

When individuals need to participate in physical therapy, the experience is not always pleasant due to the discomfort experienced as a component of rehabilitation. However, the use of music can make the experience not only more enjoyable, but also more effective. Music is being used in many different forms of rehabilitation for people who have experienced or are living with physical disabilities (Paul & Ramsey, 2000).

When used in physical rehabilitation, music can have a range of benefits for the individual. Research has shown that even the most physically and cognitively impaired individuals can benefit from music therapy (Pacchetti et al., 2000). Not only does music help reduce the experience of pain and discomfort associated with the physical therapy, but it can also provide a source of motivation to ensure that the person continues to partake in the rehabilitation exercises (Paul & Ramsey, 2000). For example, choosing country music with a slow beat for an activity that involved balance and endurance while playing the music in the background at a

level just loud enough to be heard, captivated the person's attention enough to distract him or her from the task at hand, which in turn made the activity more enjoyable (Paul & Ramsey, 2000). Incorporating music into the rehabilitation process also increased the person's quality of life measures (Paul & Ramsey, 2000). When an individual is motivated through music to continue with physical therapy, the therapy has a chance to work which in turn will allow the individual to see progress. As progress is made with physical therapy everyday tasks become easier, making life in general easier for the individual.

Music has been used in rehabilitation to increase active joint range of motion, hand grasp, and fine motor coordination in the affected side of people who have experienced stroke (Paul & Ramsey, 2000). People who have experienced stroke and use music as an adjunct to physical therapy have seen significant improvements in ankle extension and mood while hospitalized (Jun et al., 2012). Jun et al. conducted a study of 30 individuals who had experienced a stroke. The individuals were divided into a control group and an experimental group, with 15 people in each group. There were three phases of music-movement therapy employed within the study. Phase one was preparatory activities that lasted for 20 minutes and included a thorough stretching routine meant to improve flexibility, all while seated in a wheelchair. While the participants were stretching, there was music playing in the background. It was a selection of popular music from their youth, chosen by the music therapist. The lyrics to the songs were displayed on screens so that they could sing along, and while singing, the participants were encouraged to express any emotions experienced. Phase two was the main activity and was 30 minutes in duration. This involved the participants playing eight different types of songs on instruments like tambourines and maracas. Phase three was the finishing activities that lasted 10 minutes. This involved the participants discussing any difficulties or benefits experienced throughout the first two phases. The control group did not experience these interventions.

While the results of this study showed no statistically significant differences between the control group and the experimental group in any physical aspect, the experimental group did see an increase in affected shoulder, elbow joint, and hip joint flexion and the control group remained the same or decreased (Jun et al., 2012). Also, the mood states of the experimental group were significantly increased as measured by the Korean interpretation of the Profile of Mood States Brief instrument (Jun et al., 2012). This study was impacted by the limitations of small sample size and variability of the impact of stroke. Some individuals were more physically impaired than others by stroke and, therefore, it may seemed as though there was more progress being made for them rather than for individuals with more serious physical impairments.

Another example of how music is used in rehabilitation is with individuals who have Parkinson's disease. Parkinson's disease is a degenerative disease that involves bradykinesia, or abnormally slow movement, hypokinesia, reduced movements, tremor, rigidity, and abnormalities in gait and posture (Pacchetti et al., 2000). Pacchetti et al. conducted a study looking for individuals with Parkinson's disease who were responsive to drug therapy (standard and slow-release formulations). The study had 32 individuals, 16 of whom took part in music therapy sessions. The music therapy sessions occurred on a weekly basis for 13 weeks and lasted about 2 hours. During each session, participants would listen to relaxing music for 10 minutes with visualization exercises, 10 minutes of choral singing and facial expression, breathing, and voice exercises, 15 – 20 minutes of rhythmic movement using upper and lower limbs and gait, 30 minutes of active music which involved playing instruments, 30 – 40 minutes of free body expression, 20 – 30 minutes of rhythmic music, and finally 10 minutes of conversation. The other 16 participants took part in physical therapy sessions each week that lasted 1.5 hours.

These therapy sessions included muscle stretching that affected rigidity and joint mobility, special motor tasks for hypokinesia, weight shifting and balance training to improve posture. Movement strategies were also taught to avoid falls and help maintain gait. Participants' emotional state was measured through two self-report questionnaires; part one measured happiness and its intensity and quality, and part two looked at the frequency at which happiness was felt. These examinations took place one hour before and one hour after each therapy session.

The results of this study showed that those who participated in music therapy saw significant improvement with bradykinesia, whereas the physical therapy group did not have a significant improvement (Pacchetti et al., 2000). Two months after the intervention, it was found that the individuals who participated in the music therapy did not benefit as much in regards to motor abilities compared to the group who had physical therapy because they saw more long-lasting effects with motor abilities and rigidity (Pacchetti et al., 2000). The control group saw more long-lasting physical effects than the experimental group, suggesting that physical therapy was more influential when it comes to treating Parkinson's disease. However, the quality of life had a more significant increase in the experimental group compared to the control group (Pacchetti et al., 2000). This finding suggests that music can have a significant impact on an individual's mood and outlook on life and could be effectively used as an adjunct to physical therapy.

Alzheimer's Type Dementia

Music can have an effect on older adults' perception of their quality of life by emphasizing dimensions that are non-musical, such as physical, psychological, and social aspects of life. Music can be used as a gateway for older people to be more social, to interact with others, and to open up to others about different parts of their lives (Solé, Mercadal-Brontons, Gallego, & Riera, 2010). Due to the fact that music has been able to impact an individual's quality of life, music can also be used as a type of therapy for people with Alzheimer's type dementia. Most studies in this area focus on psychological and behavioral disorders that go along with Alzheimer's type dementia, such as agitation, aggressiveness, anxiety, and depression (Guetin et al., 2012). Because of the lack of understanding regarding the way music impacts the brain, and because of the methods employed - including the different types of music therapy that could be used and the qualifications of the professional involved - it is hard to determine the validity of these studies (Guetin et al., 2102).

There is significant evidence showing that music therapy can be used as a type of support for people with Alzheimer's type dementia (Guetin et al., 2012). Studies have focused on cognitive, affective, and behavioral disorders within Alzheimer's type dementia because the music therapy can trigger autobiographical memories, positively impact anxiety, depression, and aggressive behaviors, and thus have a significant positive impact on mood and communication (Guetin et al., 2012). Enhancing a person's cognitive, affective, behavioral and social resources is helpful when facilitating memory encoding and recall of autobiographical memories (Guetin et al., 2012).

People with Alzheimer's type dementia will typically receive a receptive form of music therapy. There are three types of receptive music therapy used among people with Alzheimer's type Dementia. First is analytical; where an individual listens to music, and the therapist interprets what the individual experienced as a result of listening to the music. The therapist then encourages the individual to elaborate on his or her thoughts (Guetin et al., 2012). Second is psycho-musical relaxation, which is similar to relaxation in general and is typically used to treat

psychological and behavioral disorders such as apathy, anxiety, depression, and pain. During psycho-musical relaxation, individuals listen to 20-30 minute intervals of music intended to promote relaxation brought on by different types of musical rhythm, orchestral sound, frequencies, and volume (Guetin et al., 2012). Third is reminiscence, where the therapist puts together a selection of music that relates to the individual's history and culture, which creates emotionally charged memories which are encoded and remembered better than those which are not emotionally charged and have little meaning to the individual (Guetin et al., 2012). The main purpose of these types of musical interventions is to improve memory processes, both short- and long-term, bring back distant memories, and promote social interactions (Guetin et al., 2012). By improving memory processes and promoting social interactions, the individual may be able to communicate with others about his or her life and be able to build new social relationships.

Guétin et al. (2009) conducted a study of individuals suffering from mild to moderate stages of Alzheimer's type dementia. The individuals had a low to moderate anxiety score and there was a clinical evaluation of all participants done on the first day and several times throughout the study. Individual receptive music therapy was used with the expectation of reducing anxiety, depression, and agitation within the participants. The music chosen reflected the participants' individual musical preference and following the music therapy an interview/questionnaire was conducted. The participants listened to music for 20 minutes, and within those 20 minutes the music would fluctuate in rhythm, orchestral sound, volume, and frequency. This was intended to bring the participant into a relaxed state. The results of the study showed no statistically significant results between the music therapy group and the control group, but followed a trend with respect to scores on the Hamilton Anxiety Scale, MMSE, or Geriatric Depression Scale (GDS). On the first day of the study, participants in the music therapy group had an anxiety score of 22 (+/- 5.3) compared to the control group score of 21.1 (+/- 5.6). The final evaluation showed that the music therapy group had a greater decrease in anxiety levels. The new score was 8.4 (+/- 3.7), whereas the control group was 20.8 (+/- 6.2). Day one evaluation on the GDS revealed a mean score of 16.7 (+/- 6.2) for the music therapy group and 11.8 (+/- 7.4) for the control group. By the final evaluation the music therapy group had decreased the mean score to 8.9 (+/- 3.3) whereas the control group measured in at 11.8 (+/- 6.1). Although the results were not statistically significant overall, each group did make significant improvements in depression scores. This study shows that music therapy does hold merit when being used for people with Alzheimer's type dementia; however, due to the lack of statistical significance, it would be beneficial to repeat the study and make changes to the amount of time spent listening to music and how investigating the music's rhythm, orchestral sound, volume, and frequency were altered to see if statistically significant results are obtainable.

Cancer Care

Music therapy can be used as a means of coping with the psychological distress caused by a diagnosis of cancer (Mahon & Mahon, 2011). Mahon and Mahon documented the progress of one individual who was diagnosed with stage III Hodgkin disease and her experience with music therapy. The individual would listen to music of her own preference while the music therapist guided her through deep-breathing exercises and progressive muscle relaxation. After each session, the participant's heart rate, blood pressure, and distress level were measured. Following music therapy, the individual reported feeling less stress and anxiety and her distress level had dropped. A decrease in heart rate and blood pressure was also seen following music therapy. The individual also found that singing, moving, and playing an instrument was helpful

in distracting her from the situation at hand. She would use these techniques when she started to feel distress, pain, or nausea, and eventually was able to bring these techniques into action on her own. While the results of this person's experience with music therapy as a supplement to cancer treatment were quite positive because they are based on the experience of one person they cannot be generalized.

Research has explored the role of music therapy in lowering stress and anxiety among people going through cancer treatments. In a study by Chen, Wang, Shih, and Wu (2013), individuals who were scheduled to undergo radiation therapy for a minimum of five weeks were examined. A clinical practitioner was brought in to measure the participants' physiological conditions, such as blood pressure, heart rate, respiratory rate, and blood oxygen concentration levels, along with a psychological testing professional to administer the State Trait Anxiety Inventory. Participants were asked to complete the demographics questionnaire and two sets of 20 questions that were focused on two types of anxiety, state anxiety, and trait anxiety. The participants then listened to music that they had chosen from a pre-determined selection of music. The music was slow and soft with a steady tempo of 60-80 beats per minute. The participants were also able to adjust the volume and spent 15 minutes listening to the music they had chosen. Once this was finished, the physiological measurements and the STAI scales were repeated. The control group completed the same process with the exception of music. It was found that there were no statistically significant differences between the group that listened to music and the control group on the pre-test in looking for a baseline. However, there were statistically significant differences between the groups following the music intervention. There was a decrease of 7.19 of state anxiety for the group who listened to music and only a decrease of 1.04 in state anxiety within the control group. Similarly, in the trait anxiety group, there was a significant decrease of 2.77 in the music group and only a decrease of 1.13 in the control group following the test. Heart and respiration rates also significantly decreased for the treatment group. Overall, it was found that individuals who were receiving radiation therapy experienced decreased levels of anxiety if they were in the music therapy group compared to the control group.

Medical Procedures

Music can be very calming for people and therefore can be used before, during, or even after anxiety provoking medical procedures. Listening to relaxing music, which is typically classified as being low pitch, a slow tempo, with no lyrics, has been used in the reduction of stress and anxiety not only in people with health problems, but also with people who must experience unpleasant and invasive procedures, such as surgery or dental work (Chanda & Levitin, 2013). It can also reduce the need for anesthesia and can act as a pain reliever following a medical procedure (Batt-Rawden, 2010). Some people were able to eliminate the use of drugs, such as sleeping pills or pain medication, and replace them with music because of the relaxing qualities the music has on their systems (Batt-Rawden, 2010). Listening to music post-procedure has been known to alleviate pain and discomfort because of its ability to distract the mind and regulate mood (Chanda & Levitin, 2013). Music seems to have a unique ability to trigger emotional release and to lower levels of anxiety (Batt-Rawden, 2010).

Music has been studied as a means of reducing stress for patients undergoing surgical procedures. Chan et al. (2006) examined individuals who were having a surgical C-clamp procedure to assess pain levels in individuals who listened to music during the procedure and individuals who did not listen to music. The study allowed the 46 participants to listen to music

of their choice from a pre-selected sample of soft, slow instrumental music during the procedure, which lasted about 45 minutes. The results of this study showed that music had a calming effect on the participants' physiological and psychological stress-induced responses during the procedure. A significant decrease was seen in the participants' systolic blood pressure, respiration rate, and heart rate. Results also showed that the participants' oxygen saturation and pain levels were significantly decreased when listening to music during the procedure. While these results are encouraging, there were some limitations to the study. There were no standardized method to measure the participants' responses to music, and there were individual differences in the participants' response to music because of personal musical preferences although choice was limited. Also, the sample size was small with only two intensive care units with 46 patients. Finally, there was a chance that the results were biased because the intervention was conducted by the same person who collected the data. In the future, these two roles should be conducted by different people and the selection of music should be broader.

A meta-analysis was conducted by Bradt, Dileo, and Shim (2013) of 13 studies containing participants who were undergoing a surgical procedure, not including dental procedures, in which musical intervention was used. These procedures could be minor or major, and the age, sex and ethnicity of the participants were not limiting factors. The participants could be inpatients, outpatients, emergency or non-emergency. There were two groups of music interventions examined: music therapy, requiring the presence of a music therapist to administer the music intervention; and music medicine intervention, receptive music that was provided by the medical professional. The interventions were done during the preoperative stage and compared to standard preoperative care alone. Preoperative anxiety was measured with one of four scales; the State Anxiety scale of the State-Trait Anxiety Inventory (STAI), the visual analogue scale, numerical rating scales, or the Zung Self-Rating Anxiety Scale. Secondary measurements taken included preoperative sedative drug consumption, heart rate, respiratory rate, blood pressure, skin temperature, wound healing, infection rate, and overall satisfaction. Results showed a statistically significant decrease in anxiety according to the STAI, with a mean difference of -5.72 after the intervention. There was also a statistically significant decrease in anxiety after the intervention on all other scales. There was a minor significant effect on the participants' heart rate, with a mean difference of -2.77 after the intervention. Diastolic blood pressure was significantly affected following the intervention; however, there were no significant differences seen in the systolic blood pressure. This review of studies included over 2000 participants and 13 studies, so the results of the study were able to be generalized.

Not all health care applications of music are related to health problems. Pregnant women often experience an increase in stress and anxiety throughout their pregnancy due to concern for the health of their child and apprehension about this major life change, in addition to the many social, physical, and emotional changes they will face throughout the duration of their pregnancy (Chang, Chen, & Huang, 2008). Chang, Chen, and Huang conducted a study including women who were 18 years of age or older, expecting to have a normal, uncomplicated vaginal delivery, and within the second or third trimester of pregnancy. There were 236 women included in the study, 116 of which participated in music therapy and120 were the control group. Three self-report measures were used to assess the participants' psychological health; the Perceived Stress Scale (PSS), the State Scale of the State Trait Anxiety Inventory (S-STAI) and the Edinburgh Postnatal Depression Scale (EPDS). The results showed that the music therapy group had a significant decrease on the PSS, S-STAI, and EPDS after two weeks of intervention. The control group only showed a significant decreased on the PSS after two weeks, but no significant

differences were seen on the S-STAI or EPDS in the control group. This study showed significant results on how music therapy can be of assistance when coping with stress during pregnancy. By using multiple scales to measure stress and anxiety, researchers provided documentation that music genuinely had a positive impact on the stress levels of these women.

Conclusion

Music can have an important role to play in health care settings. It has the potential to calm and relax, as well as alleviate physical discomfort from medical procedures and physical therapy activities. Listening to music has been linked to reducing stress hormone levels, anxiety, pain, and heart and blood pressure rates. Music has a positive effect on physical well-being and mental state.

In the future, studies of the application of music in health care should focus more on how music impacts those who are musically inclined, such as dancers, singers, or musicians. The impact of personal music preference on overall health compared to pre-selected music would be an interesting comparison as well. Perhaps individuals would benefit more from listening to music that they enjoy listening to on a daily basis and are more comfortable and familiar with than listening to music that has been pre-selected by the health professionals. Many of the studies in this area were based on small sample sizes. Future studies need to expand the sample sizes to both boost statistical power and increase the generalizability of results.

In conclusion, the use of music to improve the health and wellness of individuals has a long-standing history. Recent research has documented the various benefits of including music in today's health care settings. With the potential of music to improve health outcomes in a range of domains, the need for more research has never been greater.

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Refill Your Prescription From Your Backyard: Herbal Medicine in the Treatment of Anxiety, a Review of the Clinical Evidence for Kava and Passionflower

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Abstract

The continuing high prevalence rate of anxiety suggests that effective treatment options have not been developed for many individuals. Sufferers continue to turn to alternative forms of medicine, commonly herbal remedies. The purpose of this review was to examine whether herbal medicine may be able to provide a safer, more effective and affordable, treatment for anxiety. Focus was placed on the herbs kava (Piper methysticumm) and passionflower (Passiflora incarnata). Eleven clinical trials were found that used kava as a monotherapy to specifically treat anxiety, 6 of which demonstrated significant anxiety reduction. Four clinical trials were found that used passionflower as a monotherapy to specifically treat anxiety, all of which demonstrated significant reduction. After critical analysis, both herbs were tentatively accepted for use as an effective anxiolytic treatment. Complete acceptance and recognition of these herbs in medicine will be dependent upon the standardization and continued research of each.

Anxiety is associated with many medical and psychiatric disorders (Lavie & Milani, 2004), and is recognized as the most common mental health condition worldwide (Bystritsky, Khalsa, Cameron & Schiffman, 2013). This form of mental illness affects approximately 16.6% of the world's population, however to date, only complex and variable physiological causes have been found (Somers, Goldner, Waraich, & Hsu, 2006). This multifaceted disorder makes diagnosis and treatment with pharmacotherapies and psychological interventions complicated and lengthy. As well, these treatment options are often combined with side effects, high costs, and ineffectiveness, leaving numerous anxiety suffers turning to alternative forms of medicines, commonly herbal remedies.

These remedies have been used for centuries, by cultures around the world, in folk and traditional medicine, to enhance mood and silence the mind. Even so, safety and efficacy for these herbs has only recently begun to be studied in an effective manner, with a 50% increase in literature from 2003-2008, and a dramatic increase in clinical trials over the past 10-15 years (Garcia-Garcia et al., 2008). With this rise in popularity there is a need to analyze past research, encourage further research, and discover whether or not herbal medicine may be able to provide a safer, more effective and affordable, treatment for anxiety.

The herbs kava (Piper methysticumm) and passionflower (Passiflora incarnate) have been favoured in past literature and clinical trials, for the specific treatment of anxiety. Thus, this review will focus on these two herbs, providing a brief history of each, along with a description of their physical appearance and physiology. A summarization of their inclusion in clinical trials will be discussed before taking into account experimental and herbal limitations. Based on the evidence, a conclusion will be made as to the likelihood of each herb's future success in medicine.

Kava (Piper methysticumm)

The more researched of the two herbs would be Kava. As can be seen in figure 1, Kava is a tall, branched, South Pacific shrub, which can grow up to 3.6 meters high (Nelson, 2014). The roots of the plant resemble a bundle of hairy, woody branches, and have been used for thousands of years to relieve anxiety, restlessness, insomnia, and promote relaxation for cultural, social, and religious occasions (Sarris, Mcintyre, & Camfield, 2013). The root's medicine was traditionally extracted through chewing, rock pounding, and coral abrasion, creating a pulp that could be put through a strainer and diluted with water (Nelson, 2014). In the South Pacific, kava continues to be prepared in this way, for use in cultural rituals and welcoming ceremonies (Wolsey, 2008). Both Hillary Clinton and Pope John Paul II consumed kava during their visits to the South Pacific (Wolsey, 2008).

Figure 1. Roots of harvested kava for use in traditional preparations (Plants and People, n.d.)

In the 1700's kava was introduced to the west by Captain James Cook, though it took until the 1900's for it to gain popularization as an anxiolytic medicine (Wolsey, 2008). In 2002 this popularization was disrupted when kava was withdrawn from UK and European markets due to reports of possible hepatotoxicity (Teschk, Sarris, Glass, & Schulze, 2011). However, this disruption did not last long after a rigorous review by World Health Organization (WHO) concluded that these reports were rare occurrences, and likely associated with the following risk factors (World Health Organization, 2007):

- Acetonic extracts
- Ethanolic extracts
- Alcohol intake
- Co-medication with potentially hepatotoxic medicines
- Co-medication with potentially interacting medicines
- Pre-existing liver disease
- Significant overdose
- Genetic polymorphisms of cytochrome P450 enzymes
- Inappropriate plat parts

- Inappropriate cultivars

In the past 17 years no clinical trials have shown signs of hepatotoxicity or liver damage, though mild side effects such as nausea, headache, dizziness, skin rash, mouth numbness and unpleasant taste have been reported by a small percentage of people who consumed Kava products. In the west, these Kava products include liquids, tinctures, extracts, capsules, tablets, powders, teas, anti-energy drinks, cigars, candies, and chocolates. In order to avoid mild side effects when consuming these products consumers should familiarize themselves with the possible risk factors mentioned above. Consumers should also understand that each product's ability to reduce anxiety is based on the quantitative and qualitative presence of Kava's psychoactive ingredients and not just the quantity of the product itself.

Physiology

The psychoactive components of the kava plant are known as Kavalactones (kl) (Raduege, Kleshinski, Ryckman & Tetzlaff, 2004). These Kavalactones are concentrated in the root parts of the plant, decreasing in both quantity and quality towards the aerial parts, where toxic alkaloids can be found (Nerurkar, Dragull, & Tang, 2004). To date, there have been 18 different kavalactones identified as psychoactive. Six of these (methysticin, dihydromethys-ticin, kavain, dihydrokavain, demethoxyyangonin, and yangonin) hold 96% of the plant's total pharmacological activity (Amorim, et al, 2007).

Studies have shown that these kavalactones increase the activity of gama-aminobutyric acid (GABA), specifically $GABA_A$, receptors by altering the lipid membrane structure and sodium channel function (Teschke, Qiu, Lebot, 2011). These $GABA_A$ receptors are the binding sites for gama-aminobutyric acid (GABA), one of the main inhibitory neurotransmitters in the central nervous system (Foster, & Kemp, 2006). By altering $GABA_A$ receptors, kavalactones allow GABA to bind more effectively, inducing relaxation and reducing anxiety (Foster, & Kemp, 2006). The single kavalactone desmethoxyyangonin has been shown to act as a monoamine oxidase (MAO-B) inhibitor (Uebelhack, Franke & Schewe, 1998). MAO-B is the enzyme responsible for metabolising dopamine in the brain, a neurotransmitter associated with memory, behaviour, cognition, attention, sleep, and mood (Youdim, & Weinstock, 2004). Thus, by acting as a MAO-B inhibitor, this kavalactone prevents the breakdown of dopamine and increases its available quantity (LaPorte et al., 2011).

These two modes of action (increasing the effect of the neurotransmitter GABA and increasing the availability of the neurotransmitter dopamine) should make kava an effective anxiolytic. However, until numerous clinical trials test this hypothesis kava will continue to remain in the grey area of medicine.

Clinical Trials

To date, there have been 11 clinical trials that used kava as a monotherapy to specifically treat anxiety. Table 1 offers an overview of each. Note that all trials except one (Connor & Davidson, 2002) measured anxiety using the Hamilton Anxiety Scale (HAMA). This scale includes 14 items defined by a series of symptoms including anxious mood (i.e., worries, anticipates the worst) and fears (i.e., dark, strangers, being alone, animals, crowds). Each item is rated from 0 (not present) to 4 (severe). Total scores for this scale range from 0 to 56 and are grouped into 4 categories of anxiety classification, as seen in Table 2 (Hamilton, 1959).

The first randomized, placebo-controlled, multi-centered, double-blind clinical study of kava for the specific treatment of anxiety was conducted by Volz and Kiesser (1997). Over a 24

week period 101 outpatients with a HAMA score greater than19 either received 70 mg kavalactones (kl) or a placebo, daily. After 8 weeks, results showed that kava had significantly lowered anxiety and was superior to the placebo. Furthermore, no significant adverse events were reported (Volz & Kiesser, 1997).

Malsch and Kieser (2001) conducted a clinical trial using Kava to aid in withdrawal anxiety. Over a 5 week period 30 patients with a HAMA score greater than14 who had been taking benzodiazepines uninterrupted, for at least 4.5 weeks prior, were separated into two groups, kava and placebo. During the first week of treatment Kava was increased from 35 mg kl to 210 mg kl daily, where the dose remained for the following 4 weeks. During the first 2 weeks of treatment benzodiazepines were slowly tapered off. The last 3 weeks of treatment involved

Table 1
Clinical Trials Using Piper methysticumm to Treat Anxiety

Reference	Study Design	Duration	Participants	Amount of Kavalactones	Results	Reduced Anxiety
Volz, & Kieser, (1997)	• Randomized • Placebo-controlled • Multi-center • Double-blind • Between subjects	24 weeks	• 101 subjects • Mean age of 53.9 years • HAMA > 19	70 mg	Kava reduced anxiety compared to placebo (HAMA, CGI, SCL-90-R, AMS)	+ Significant
Malsch, & Kieser, (2001)	• Randomized • Placebo-controlled • Double-blind • Between subjects	5 weeks	• 40 subjects • >4.5 weeks of prior BDZ use • Mean age of 40.7 years • 15 M/25 F • HAMA > 14	35 mg increased to 210 mg	Kava reduced anxiety compared to placebo (HAMA, Bf-S, EAAS, CGI)	+ Significant
Watkins, Connor, & Davidson. (2001)	• Randomized • Placebo-controlled • Double-blind • Between Subjects	4 weeks	• 13 subjects • HAMA >16	84 mg	Kava improved baroreflex control of heart rate	+ Significant
Connor, & Davidson, (2002)	• Randomized • Placebo-controlled • Double-blind • Between subjects	4 weeks	• 38 subjects • HAMA >16 • Mean age of 51.7 years • 7 M/31 F	140 mg during week 1, increased to 280 mg	Kava reduced anxiety (HAM-A, HADS)	+ Not significant
Boerner, Sommer, Berger, Kuhn, Schmidt, & Mannel, (2003).	• Randomized • Double-blind • Multi-center • Three-arm • Between-subjects	8 weeks	• 119 subjects • 20 M/107 F • HAMA >19	120 mg	Kava was as effective as Buspirone and Opipramol in reducing anxiety (HAM-A,BOEAS, SAS, CGI, Bf-S, SF-B, AL)	+ Significant

Gastpar, & Klimm, (2003)	• Randomized • Placebo-controlled • Multi-center • Between-subjects	4 weeks	• 141 subjects • Mean age of 48.5 years • 36 M/105 F • HAMA >18	105 mg	Kava was effective at lowering patients anxiety (ASI)	+ Not significant
Geier, & Konstantinowic z, (2004)	• Randomized • Placebo-controlled • Double-blind • Between subjects	4 weeks	• 50 subjects • Mean age of 76 years • 11 M/39 F • HAMA 12-18	105 mg	Kava reduced anxiety, however results were only significant pre-protocol (HAMA)	+ Not significant
Jacobs, Bent, Tice, Blackwell, & Cummings, (2005)	• Randomized • Placebo-controlled • Double-blind • Three-arm • Internet based • Between subjects	4 weeks	• 391 subjects • Mean age of 41.4 years • 83 M/309 F	300 mg	Kava reduced anxiety, however was not superior to placebo (STAI-State subset)	+ Not significant
Sarris, Kavanagh, Byrne, Bone, Adams, & Deed, (2009).	• Randomized • Placebo-controlled • Double-blind • Placebo run-in • Within subjects	3 weeks	• 41 subjects • > 1 month elevated anxiety • Mean age of 43.75 years • 23 M/ 18 F • Average HAMA of 23.9	250 mg	Kava educed anxiety and depression compared to placebo (HAMA, BAI, MADRS)	+ Significant
Sarris, Scholey, Schweitzer, Bousman, LaPorte, & Stough, (2012).	• Randomized • Placebo-controlled • Double-blind • Three-arm • Between subjects	3 weeks	• 22 subjects • Mean age of 33.3 years • 7 M/15 F • HAMA 14-25	180 mg	Kava did not reduce anxiety compared to oxazepam	- No reduction in anxiety
Sarris, Stough, Bousman, Wahid, Murray, Teschke, & Schweitzer, (2013).	• Randomized • Placebo-controlled • Double-blind • Between subjects • Placebo run-in phase	6 weeks	• 58 subjects • Mean age 30.1 years • 20 M/38 F • Average HAMA 20.57	120 mg, titrated to 240 mg in nonresponse at 3 weeks	Kava reduced anxiety compared to placebo (HAMA)	+ Significant

HAMA: Hamilton Anxiety Scale; CGI: Clinical Global Impressions; SCL-90-R: Self-Report Symptom Inventory-90 Items revised, sub score somatic anxiety; AMS: Adjective Mood Scale; Bf-s: Subjective Well-being Score; EAAS: Erlanger Anxiety, Tension and Aggression Scale; HADS: Hospital Anxiety and Depression Scale; BOEAS: Boerner Anxiety Scale; SAS: Self-Rating Anxiety Scale; SF-B: Self-Rating Sleep Questionnaire; AL: Quality-of-Life questionnaire; ASI: Anxiety Sensitivity Index; STAI: State-Trait Anxiety Inventory; BAI: Beck Anxiety Inventory; MADRS: Montgomery-Asberg Depression Rating Scale;

Table 2.

Classification of anxiety based on total score

Normal range	Mild	Moderate	Severe
0 – 13	14 – 17	18 – 24	25 and over

either kava monotherapy or placebo monotherapy. At the end of the 5 weeks, results showed that kava was significantly superior to placebo, as indicated by significantly lower scores on the HAMA and significantly higher scores on the subjective well-being (Bf-S) scales (Malsch & Kieser, 2001).

Also in 2001, Watkins and his colleagues conducted a study of the effects of kava on vagal cardiac control (parasympathetic control of the heart), a common complaint in patients with anxiety. They used two tests to measure this control, the baroreflex control of heart rate (BRC) and respiratory sinus arrhythmia (RSA). Over a 4 week period 13 participants with a HAMA score greater than16 either received 84 mg kavalactones or a placebo, daily. The results showed that kava had significantly improved patients BRC, both clinically and compared directly to the placebo group. However, no significant difference was found between the groups for RSA levels (Watkins et al., 2001).

Boerner and his colleagues (2003) conducted a three arm clinical trial comparing kava, buspirone and opipramol, in their ability to treat anxiety. Over an 8 week period 119 patients with HAMA scores greater than19 either received 120 mg kavalactones, 10 mg buspirone, or 100 mg opipramol, daily. The results showed a significant reduction in anxiety for all 3 treatment groups, with no significant difference between. This was the first clinical study to compare kava with anxiolytic pharmaceuticals (Boerner et al., 2003).

In 2009, Sarris and his colleagues conducted the first placebo run-in clinical trial, using kava to reduce anxiety. All participants received placebo treatment during this run-in period. Nineteen participants were removed at the end of the first week, before entering the clinical trial, due to their high placebo response. Over the next 2 weeks 60 participants with an average HAMA score of 23.9 all received one week of kava treatment (250 mg) and one week of placebo treatment, in a counterbalanced order. The results showed that when kava was taken, regardless of dosage order, anxiety was significantly reduced. These findings were replicated by Sarris (2013), who used 75 participants with an average HAMA score of 20.57. During the placebo run-in phase, 17 responding participants were removed. Over the following 5 weeks, participants either received 120 mg kavalactones (titrated to 250 mg kavalactones in nonresponse at 3 weeks) or a placebo daily. Again, kava significantly reduced anxiety compared to placebo.

Throughout all of these clinical trials, that used kava as a monotherapy, participants' anxiety, for the most part, was reduced. This promising evidence removes many doubts associated with kava, and may help this herb become recognized as an anxiolytic medicine.

Passionflower (Passiflora *incarnate*)

The second herb to be discussed is passionflower, a common wildflower in southern United States, as seen in Figure 2. This fast growing, climbing vine, can reach up to 9 meters in height (Castleman, 2002). It produces brightly colored purple and pink flowers in the month of May, which is the reason it is commonly referred to as "Maypop" (Spinella, 2001).

In the 1560's Native Americans used passionflower in teas to relieve insomnia, restlessness, menstrual discomforts, diarrhea, epilepsy and whooping cough (Castleman, 2002). It took until 1839 for passionflower to gain respect as an anxiolytic remedy, after it was included in New Orleans Medical Journal as a non-narcotic sedative and digestive aid (Castleman, 2002). Since this time, passionflower's relatively safe and nontoxic qualities has earned it a spot as an official plant drug in the pharmacopoeias of America, Britain, Egypt, France, Germany, and

India (Lakhan, & Vieira, 2010). In the west, passionflower is included in products like liquids, tinctures, extracts, capsules, tablets, powders, teas, and anti-energy drinks. As mentioned with Kava, consumers should understand that each product's ability to reduce anxiety differs based on the presence of passionflower's psychoactive ingredients.

Figure 2. A bloomed flower of the Passiflora incarnate plant (Freeman, 2004).

Physiology

The psychoactive components of the passionflower plant are flavonoids and indole alkaloids (Spinella, 2001). They are found most abundantly in the aerial parts of the passionflower plant (Dhawan, Kuma, & Sharma, 2001). To date, 4 flavonoids (chrysin, vitexin, coumerin, and umbelliferone) and 4 indole alkaloids (harman, harmine, harmaline, and harmalol) have been identified as psychoactive (Spinella, 2001).

The flavonoid chrysin is responsible for binding to benzodiazepine sites on $GABA_A$ receptors (Spinella, 2001). The presence of this flavonoid prompts the binding of the neurotransmitter GABA to the same $GABA_A$ receptors (Spinella, 2001). Once GABA is bound, relaxation is induced and anxiety is reduced (Foster, & Kemp, 2006). The flavonoid vitexin acts as a thyroid agonist (Spinella, 2001). In high quantities, thyroid hormones are responsible for increasing body temperature and heart rate, two common symptoms of anxiety, thus, by acting as an agonist, this flavonoid is able to reduce body temperature and heart rate (Shames & Shames, 2011). In large quantities harman alkaloids are hallucinogenic and presumed to work through 5-hydroxytryptamine (5-HT) receptors, also known as serotonin receptors (Shames & Shames, 2011). Serotonin is a neurotransmitter in the brain that is associated with well-being and happiness (Young, 2007). Although the exact role this alkaloid plays on its receptors is unknown, it is thought to increase serotonin's effect, increasing well-being and happiness in anxiety suffers.

These three modes of action (increasing the effect of the neurotransmitter GABA, acting as a thyroid agonist, and effecting serotonin) make passionflower, like kava, an effective herb for lowering anxiety. Again, this assumption must be proven through numerous clinical trials before it can become seriously recognized as an anxiolytic medicine.

Clinical Trials

To date, there have been four clinical trials that used Passiflora incarnata as a monotherapy to specifically treat anxiety. Table 3 offers an overview of each. In all four trials, a

significant reduction in anxiety was observed, though only one study had a duration longer than 24 hours (Akhondzadeh, et al, 2001).

The first clinical trial was conducted in 2001, by Akhondzadeh and his colleagues. Over a 4 week period, 36 outpatients with HAMA scores greater than 14 either received 2.25 ml Passiflora incarnata drops and a placebo tablet daily, or 30 mg oxazepam tablet and placebo drops daily. The results showed that both oxazepam and passionflower significantly reduced anxiety, with no significant difference between the two. Passionflower had a slower onset but led to significantly fewer issues related to job impairment and performance (Akhondzadeh et al., 2001).

In 2008, Movafegh and his colleagues conducted a study using Passionflower to treat surgical anxiety (inguinal hemiorrhaphy). Sixty patients classified as ASA I & II either received 500 mg Passiflora incarnate or placebo, 90 minutes prior to surgery. The results showed that

Table 3.

Clinical Trials Using Passiflora incarnata to Treat Anxiety

Reference	Study Design	Duration	Participants	Amount of Passiflora incarnata	Results	Reduced Anxiety
Akhondzadeh, Naghavi, Vazirian, Shayeganpour, Rashidi, & Khani, (2001).	▪ Randomized ▪ Placebo-controlled ▪ Double-blind ▪ Between subjects	4 weeks	▪ 36 subjects ▪ 16 M/20 F ▪ HAMA >14	2.25ml	Passionflower reduced anxiety (HAMA) ad effective as Oxazepam	+ Significant
Movafegh, Alizadeh, Hajimohamadi, Esfehani, & Nejatfar, (2008).	▪ Randomized ▪ Placebo-controlled ▪ Double-blind ▪ Between subjects	90 min, follow up for the following 7 days	▪ 60 patients having inguinal hemiorrhaphy ▪ Mean age of 31.85 years ▪ 30 M/30 F ▪ ASA I & II	500 mg	Passionflower reduced anxiety compared to placebo (NRS)	+ Significant
Aslanargun, Cuvas, Dikmen, Aslan, & Yuksel, (2012).	▪ Randomized ▪ Placebo-controlled ▪ Double-blind ▪ Between subjects	90 min	▪ 60 patients having spinal anesthesia ▪ Mean age of 47 years ▪ 52 M/8 F ▪ ASA I & II	5 ml	Passionflower reduced anxiety compared to placebo (STAI-S)	+ Significant
Kaviani, Tavakoli, Tabanmehr, & Havaei, (2013)	▪ Randomized ▪ Placebo-controlled ▪ Negative group ▪ Between subjects	< 24 hours	▪ 63 patients having periodontal treatment ▪ Mean age of 34.07 ▪ 25 M/39 F ▪ ASA I & II	1ml night before, 1ml <90 min prior to treatment	Passionflower reduced anxiety compared to placebo and negative control (Corah's DAS-R)	+ Significant

NRS: Numeric Rating Scale; STAI-S: State Anxiety Inventory; Corah's DAS-R: Dental Anxiety Scale-Revised

passionflower had significantly reduced patients anxiety compared to the placebo (Movafegh et al., 2008). This study was replicated in a similar manner by Aslanargun and his colleagues in 2012, again demonstrating significant results (Aslanargun et al., 2012).

Kaviani et al. (2013) conducted a study using both a placebo group and a negative group. Sixty-three participants classified as ASA I & II were randomly assigned to either receive 1 ml Passiflora incarnate, placebo, or nothing, the night before sugary. The same intervention was

given 90 minutes prior to surgery. Results showed that compared to both the placebo and negative group, passionflower had significantly reduced patient's anxiety.

Throughout these clinical trials, that used passionflower as a monotherapy, participant's anxiety was consistently reduced. Like mentioned with kava, this evidence is promising, and can help remove the doubt that has been associated with this herb, assisting in its recognition as an anxiolytic medicine. Even so, the clinical trials for passionflower, as well as the clinical trials for kava, were not perfect. A small number of flaws may have influenced the direction of results in a few of these reviewed studies. By bringing these issues to light a better picture can be created for both current and future researchers.

Clinical Trial Limitations

The most common and pressing issues in kava and passionflower trials were limited participant pools, treatment duration, placebo response rates, dosage quantity, dosage quality, and dosage recording. Three out of four of the discussed passionflower trials selected only participants undergoing surgery. This greatly narrowed the type of anxiety experienced by participants, and thus the type of anxiety studied by researchers. As well, this type of surgical study shortened the duration of treatment to less than 24 hours, failing to allow long term conclusions to be made. Future studies should consider lengthening treatment duration, and broadening participant selection.

Regardless of treatment duration, high placebo response rates often minimized significant findings. Out of the 15 clinical trials only 2 ran placebo run-in phases, where 32% and 23% of participants were removed. Had these participants not have been removed, they would have contributed to the placebo response, lowering the significant difference between herbal intervention and placebo response rates. Hence, selecting participants with similar levels of anxiety does not remove the fact that different participants may have different personalities and different responses to placebo. This limitation may have prevented several of the reviewed studies from demonstrating significant results, and so, a placebo run-in period is necessary, and highly recommended for future studies.

As well, dosages varied significantly. In the kava trials, dosages ranged from 70 mg kavalactones to 300 mg kavalactones, and in the passionflower trials, the dosages ranged from 1 ml Passiflora incarnata to 5 ml Passiflora incarnate, for the liquid extracts. Not only did the amount of preparation vary, but at times dosages were recorded in percentages, while at other times in milligrams, millilitres, or grams. This addition of conversions made comparisons across trials difficult, and in some instances impossible (ex. ml to grams with no standardization). Dosage regulation was also questionable. In some trials dosages were recorded by amount taken per day, while in other trials by the amount taken 'X' times per day. There was no pattern across trials of adjusting dosages based on anxiety scores, nor adjusting dosages based on duration of treatment. Dosages were varied in an unregulated manner, changing in quantity, quality, duration of treatment, and dosages per day. These issues can be easily rectified, and clinical trials can reach common ground, after each herb becomes standardized.

Future studies should understand that limited participant pools, treatment duration, placebo response rates, dosage quantity, dosage quality, and dosage recording, effect the generality and applicability of results. Thus, experimenters, reviewers and consumers should critically take these issues into account. Aside from these clinical limitations however, the herbs themselves create issues, most of which, like these limitations, can be easily solved.

Discussion of Herbs

The most pressing issues for kava and passionflower herbs are the plants' unknown physiology, and exposure to various extraneous influences. Each herb has a multi-targeted, polyvalent, synergistic mechanism of action, which logically, should make them a triumph in the medical community, but realistically, has prevented them from moving forward. This complex mode of action has created challenges in both evaluating treatment effects and evaluating evidence. The 15 papers included in this review had general, nonspecific information on the physiology associated with each herb. It is clear that this area of herbal medicine is in need of more research. If this research takes place, the multiple outside influences that effect the herb's anxiolytic benefits should be taken into account.

Extraneous influencers potentially confound experimental results. For example, when two trials use the same quantity of herbal preparation but get different results, there is no way to tell if this was due to experimenter bias, research design, or outside influences. This issue can be fixed through standardization and control of genetic differences, environmental differences, soil quality, exposure to airborne vectors, differences in parts used, harvest time, extraction method, storage method, and manufacturing method. This may seem like a lot to ask, but remember, people in the South Pacific have been preparing kava for thousands of years without a problem, using only a rock, a strainer, and fresh water. Overall, for this form of alternative medicine to move forward specific research on the herbs physiology and influence of peripheral factors is in desperate need.

Conclusion

After reviewing the clinical trials associated with kava and passionflower, it is clear that both herbs hold potential to treat anxiety, and at least partially replace anxiolytic pharmaceuticals. Currently however, proper guidelines for the production and use of these herbs are near absent, making clinical prescriptions and their acceptance for use lag behind. The data thus far suggests that kava may be useful in lowering BRC and withdrawal anxiety, and may be as effective as buspirone and opipramol in lowering general anxiety, while passionflower may be useful in lowering anxiety prior to surgery, and may be as effective as oxazepam in treating general anxiety. Thus, clinical trials, as well as treatments, would greatly benefit from the standardization of these herbs. In conclusion, although both herbs show potential for the treatment of anxiety, caution should be taken when generalizing or applying the use of these herbs, given the minimal research to date. At this point in time, choosing to accept, or reject, these herbs as a treatment for anxiety would be both naive and careless.

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Real Eyes Real Lies Realize: Facial Expressions and Lie Detection

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Have you ever wondered if it is actually possible for your mother to tell when you are lying? Can it be true that when your husband or wife says they can see the lies in your face or your eyes that they really can? In this literature review I attempt to answer these questions. To do so it is important that some basics of emotions are first established along with a discussion of the universality of the facial expressions of emotion. Once these are introduced, an analysis of the deception literature, as it relates to emotions and facial expressions, will be discussed. Why should we care? Because on average, everyone lies at least twice in every day (Brinke, Porter, & Baker, 2011).

The concept of emotions, facial expressions and deception are far from new topics. Darwin was discussing facial expressions, from an evolutionary perspective, in 1872 (Ekman, 1992) and he believed that emotions and facial expressions were heritable (Brinke, Porter, & Baker, 2011). Further, Darwin proposed that, although there are numerous ways to express oneself, the face was the main component of the emotional expression system.

Emotions appear to be essential for everyday life and are vitally important in communication. This importance is expressed by Ekman (1999) who suggested that those who were unable to display facial expressions, such as people with congenital facial paralysis, had a difficult time creating and maintaining relationships, both platonic and romantic. Further, having the ability to read facial expressions accurately is an important ability in its own right. Bond and DePaulo (2008) suggest that being able to detect lies through facial and verbal cues has been a popular topic of interest for many psychologists over the past few decades. Early research suggested that using nonverbal and verbal cues in lie detection was unreliable however in recent years this belief has drastically changed (Mann et al., 2013). Recently Vrij, Mann, and Lea (2013) focused on creating interview techniques that emphasize cues of deception and others have suggested that verbal cues and body language are important when detecting lies (Okubo, Ishikawa, & Kobayashi, 2013; Stel, van Dijk, & Olivier, 2009). However, other research also points to the importance of facial expressions of emotion as important cues (Stanley & Blanchard-Fields, 2008). In the coming pages I will examine the role of emotions in deception detection but first, in order to facilitate the understanding of detecting deception through facial expressions, one must consider basic emotions and facial expressions, the ability to falsify these expressions, and cues to avoid when being deceitful.

Basics of Emotions

Emotions can be summed up into brief psychological-physiological actions that display affective changes in order to adapt to environmental demands, meaning that emotions are responses that occur after being triggered by the environment, often occurring in less than a second (Hurley, 2011). They are internal signals, but are also expressed externally through facial expressions with basic emotions seemingly displayed consistently cross-culturally (Sauter, Eisner, Ekman, & Scott, 2010). This apparent universality of facial expressions implies that they may be genetically determined (Hurley, 2011).

Facial expressions are defined as visually observable combinations of muscle positions in the face (Recio, Schacht, & Sommer, 2013) and, according to Ekman, cross-cultural observers typically recognize facial expressions of the same six emotions: happiness, surprise, fear, sadness, anger, and disgust/contempt (Ekman, 1992). Ekman and Friesen (1975) also found that some expressions form in a similar way but they differ in specific respects. Although Ekman and Friesen created their own theory of emotions and facial expressions over 45 years ago (Ekman, 1992), they have modified it more recently and this is the emotions framework that I will follow in this review.

Ekman and Friesen's Theory of Basic Emotions

As previously mentioned, Ekman and Friesen created their theory of basic emotions which included surprise, fear, disgust, anger, happiness, and sadness decades ago (Ekman & Friesen, 1975; Ekman 1992). Ekman has clarified and updated numerous aspects of his theory. First he stated that that moods and emotional traits, unlike emotions, did not have their own distinctive signals (Ekman, 1999). He explained that it is normal for observers to mix physical emotional signals which contributed to the interpretation of a mood. For example, anger-related signals can lead to the assumption of an irritable mood, but this does not mean that mood is defined by the anger signals. Secondly, he wanted to be very clear with the term basic. He explained that the word basic meant that each emotional expression was separate of any other expression and not that it was simple. This meant that emotions he described were basic in the sense that they could be distinguished and not that they were simple or more easily defined than other, perhaps, non-basic emotions (Ekman, 1999).

In 1999, Ekman broadened his six basic individual and separate emotions theory to a notion of emotional families. In this modification he suggested that fifteen emotions (i.e., amusement, anger, contempt, contentment, disgust, embarrassment, excitement, fear, guilt, pride in achievement, relief, sadness/distress, satisfaction, sensory pleasure and shame) were responsible for a family of other related emotions.

Facial Expressions and Emotions

Although Ekman began to alter his theory 20 years later, many theorists still base their research and theories on the original six basic emotions notion. In a study performed by Ekman, O'Sullivan, Friesen, and Scherer (1991), they used a model created by Ekman and Friesen in 1976 known as the Facial Action Coding System (FACS). This system defined expressions based on the use of key facial muscular actions. For example, Duchenne smiles take place when a person is honestly experiencing enjoyment, and it involves the zygomatic major and orbicularis oculi muscles (Stel, van Dijk, & Olivier, 2009). This allowed observers the ability to see such facial muscles as a Duchenne smile, which occurred more often in honest interviews rather than masking smiles which occurred in deceptive interviews (Ekman et al., 1991). Similarly, Brinke, Porter, and Baker (2012) found that the "grief" muscles (corrugator supercilii and depressor anguli oris) were often suppressed by honest participants rather than deceptive participants.

Facial expressions and emotions usually go hand in hand, but whether they are honest expressions is another situation. Facial expressions can be either controlled or uncontrolled. Ekman and Friesen (1975) describe in great details, what specifically happens to the face and what muscles are used for the six basic emotions in their book *Unmasking the Face.* They also discuss what happens with the face muscles during deception which is essential knowledge when trying to detect deception. In this section, and before discussing deception, it is important to

discuss the true, automatic, and seemingly universal facial expressions. Once we know how things are supposed to look we will be able to better understand what happens when we try to give false emotional expressions. So the upcoming sections examine each basic emotion, as defined by Ekman and Friesen (1975), and the corresponding facial response. Below in Figure 1, are the emotions and corresponding facial expressions used by Ekman and Friesen (1975).
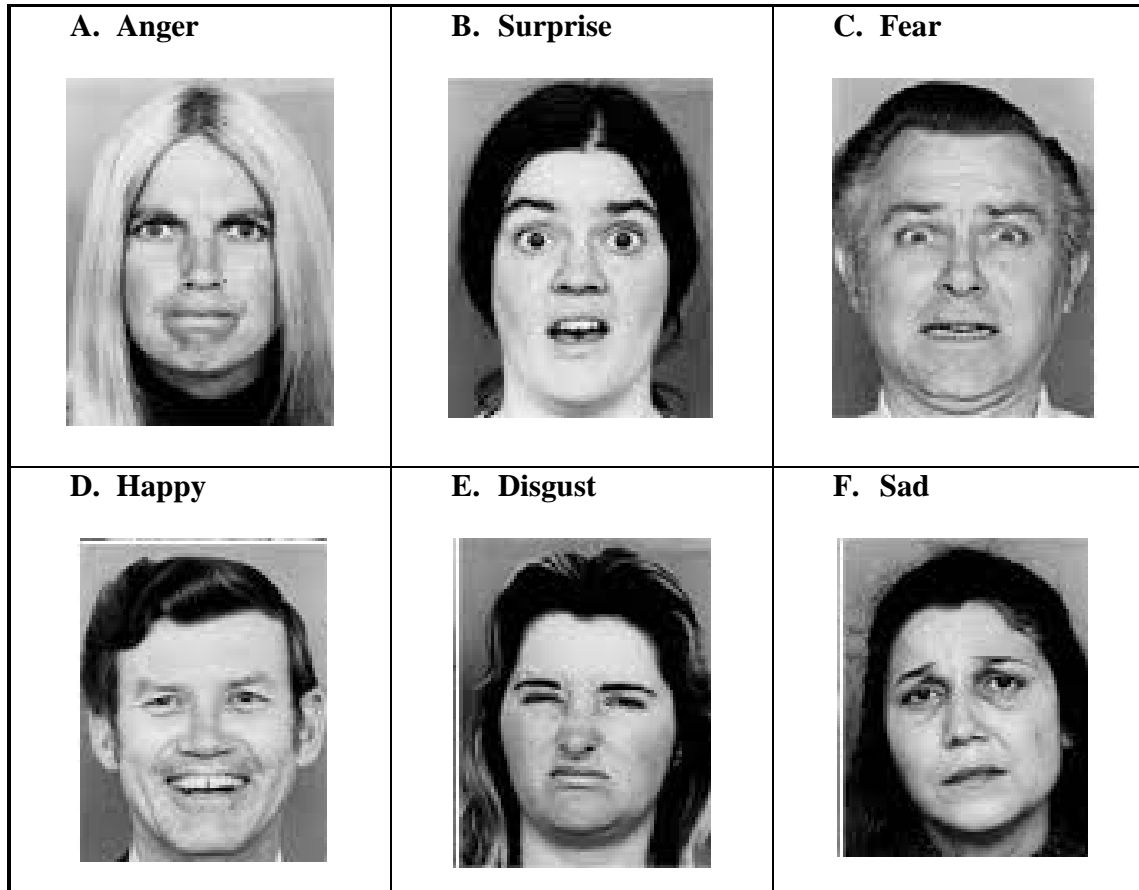

Figure 1. Emotions and the corresponding facial expressions used by Ekman and Friesen.

Anger. Anger is one of the most intensely displayed emotions and perhaps the most important to be able to recognize since many times the display is accompanied by a threat. Thankfully, the display of anger is usually quite obvious. The eyebrows are lowered and brought together, resulting in vertical lines developing between the brows. Accompanying this are tensed upper and lower eyelids which may or may not be raised. The eyes, which may appear to bulge, produce a firm stare and the nostrils may be dilated, although this is not a key aspect in the expression of anger. The lips are either pressed together firmly with the corners of the mouth straight, down or open but are usually pulled tightly as if the individual is yelling (Ekman & Friesen, 1975).

Surprise. Surprise is an emotion that takes place when something happens that is usually completely unknown to the person and is a very difficult emotion to fake due to the fact that it usually takes place instantly and is not controlled. There are three main things that take place in three entirely different places of the face during surprise: the eyebrows are curved and high, the eyes are widely opened, and the jaw is dropped and open. The eyebrows that are raised during

surprise tend to stretch the skin and cause horizontal wrinkles on the forehead. Of course, some wrinkles are deeper than others but the focus is on the raised eyebrows. The eyes that are wide open during surprise usually have relaxed lower eyelids, and raised upper eyelids. Often the sclera (white part of the eye) is easily seen above the iris (colored part of the eye). Sometimes it is also seen below the iris, but this usually differs from person to person, based on how their eyes are situated and if the skin below the eye is pulled tight enough by the dropped jaw. The lower jaw shows surprise usually when it is dropped so far that the lips and teeth are separated. Usually everything looks relaxed during surprise in the mouth area. The lips and jaw are relaxed, often portraying that the mouth actually just fell open (Ekman & Friesen, 1975).

Fear. Fear is displayed through raised and drawn together eyebrows with the eyes open but with tensed lower eyelids. The lips are stretched back tightly and, much like surprise, the eyebrows are lifted but this time with the inner corners of the brow being closer together. The fear expression also leads to wrinkles on the forehead, but they do not usually stretch across the whole forehead like surprise. Different from surprise, fear has both the upper and lower eyelids opened and tensed and, although the mouth is also opened during fear, the lips are pulled back and the corners of the mouth are drawn tight. In general, during fear most of the face is tight and pulled back (Ekman & Friesen, 1975).

Happiness. Happiness is the most popular and desirable emotion and is also one of the most common expressions to be displayed dishonestly. For a true display of happiness, the corners of the lips are tightly pulled back and up, sometimes with the teeth showing. A wrinkle that extends from the nose to the outer edge of the lip corners, also known as the naso-labial fold is often present. The cheeks are raised, and the crow's-feet wrinkle is displayed from the outer corners of the eyes. The lower eyelids display wrinkles underneath them, and are usually raised but are not tense (Ekman & Friesen, 1975).

Disgust. Ekman says that the best way to describe disgust is the feeling that someone has when they have something in his/her mouth that he/she dislikes and it is displayed very differently from any other emotion. With that said, it is usually never misinterpreted for another emotion. Disgust is displayed with the upper lip raised, and is accompanied by a wrinkling of the nose. During extreme cases of disgust, the lower lip may be lowered and slightly forward. The upper cheeks are raised, causing slight wrinkles underneath the eyelids. Finally, the eyebrow is lowered, which in turn lowers the upper eyelid (Ekman & Friesen, 1975).

Sadness. Sadness is an emotion that is often attempted to be hidden or suppressed. It is a passive emotion rather than an active emotion like happiness. During sadness, the inner corners of the eyebrows are raised together. The skin underneath the eyebrow is triangulated, with the inner corners of the eyebrows up. Usually the upper corner of the eyelid is raised as well. However, the one outstanding feature of sadness is what occurs with the mouth. The corners of the lips are turned down, and sometimes the lip can be trembling (Ekman & Friesen).

Each of these emotions have very specific facial expressions, making them very different from one another. Most times these expressions are obvious to any observer, however over the past few decades a new phenomena, known as micro-momentary expressions, has become of interest within emotions and facial expressions.

Micro-momentary Expressions

After learning how emotions are displayed through facial expressions, one may think that it is easy to perceive another's emotions however it is not always that simple. People often suppress or hide their emotions for various reasons and this is when micro-momentary expressions would be helpful to depict emotions that are not so obvious to the eye.. Research surrounding micro-momentary expressions is lacking since these have only been the focus of attention over the past decade. However, Ekman proposed that when an emotion is hidden, it is still possible to detect the true emotion through these micro-momentary expressions, also known as microexpressions (Porter & Brinke, 2008). A microexpression is a brief display of a true emotion through the face that usually lasts between 1/5 - 1/25 of a second (Porter & Brinke, 2008). Although this short timeline makes it very difficult for someone to notice it, it is the witnessing of these microexpressions that can lend a hand in detecting deception. Sometimes it can be very difficult for someone to be able to detect lies, other times emotional leakage is easy. It is emotional leakage, whether obvious or not, that can reveal a person's true feelings. Brinke et al. (2012) said that emotional leakage is more likely to occur when the lie is either more complex, or when the emotion that is attempting to be concealed is so strong. They suggested that with leakage of genuine emotions, the muscles in the upper face were more likely to fail when attempting to conceal an emotion than the lower face (Brinke et al., 2012). This meant that with emotional leakage, often times focus should be on the upper area of the face such as the eyes. This leads us to the point of the paper, detecting deception through emotional leakage and facial expressions.

Deception

Stanley and Blanchard-Fields (2008) define deception as a deliberate attempt to mislead others and deception has been described as a fundamental aspect of human nature (Brinke et al., 2011). Deception usually has two people involved; the liar and the judge (Bond & DePaulo, 2008). Not only do people rely on lies in everyday life, but they also depend on the notion that people are not skilled enough to catch their lies (Stanley & Blanchard-Fields, 2008). Lying for a living would include people in professions such as gamblers, con artists, and politicians (Stanley & Blanchard-Fields, 2008). However, deception is rarely viewed as a positive. The Global Deception Team (2006), a group of psychologists who gathered together to examine beliefs about cues to deception, found that out of 555 personality trait terms, liar was the least liked term.

There are various aspects of lies which include why people tell lies, which lies are more important than others, and also why it is important to detect lies. Each of these aspects will be described in further detail.

Motivation for Lying

It was previously mentioned that on average, people tell two lies per day (Brinke et al., 2012) so if liar was the least liked term out of 555 words, why do people lie and risk being labelled as such? What motivates someone to lie is of great interest and Brinke et al. (2012) suggested that there are three common motives for lying which were altruistic behaviors, altering displayed impressions, and for personal gain. Altruistic behaviors for lying would mean that people tell lies in order to be self-less or kind. For example is someone says that your dress is

nice, even when it is not. This is a lie, but by doing so you feel good. When someone lies in order to alter their displayed impression of themselves, this means that someone lies about the way they truly feel or are, in order to control how others think of them. For example, if someone says that they like a certain band because all of his/her friends like a certain band, when really he/she hates the band. He/she lies in order to alter his/her impression of his/herself. Lastly, lying for personal gain is straight forward. People lie in order to gain something for themselves. For example people lie about their age in order to obtain personal gain, whether it is having the ability to get into a bar underage, or date someone that is far from close to your age..

Consequences of Lying (Low vs. High Stakes)
         Similarly to the different motives for lying, there are also different magnitudes of lies. Low stake lies are not only valued differently than high stake lies, but they are also detected differently. Low stake lies are also known as trivial white lies. These types of lies would include such a lie as talking about someone positively that the liar actually dislikes (O'Sullivan, Frank, Hurley & Tiwana, 2009). High stake lies, on the other hand, are more serious and typically personal. With high stake lies, the liar is lying about something that is personally important to them such as if they committed a crime (O'Sullivan, Frank, Hurley & Tiwana, 2009). O'Sullivan, Frank, Hurley, and Tiwana (2009), in a meta-analysis, had 23 different studies using 31 different police groups in eight countries, in order to study police officers and their ability to detect lies. They found that being able to detect lies was highly based on the stakes of the lies being told. They focused on criteria which included telling a personal lie which may or may not have resulted in an outstanding reward or punishment for the liar. It was found that police officers were able to detect lies significantly more accurately when the liar was telling a high-stake lie rather than a low-stake lie. This may be because emotional leakage is difficult to detect in low stake lies because there are minimal behavioral signs leaking through, but with high stake lies, there is more of a need to seem convincing, therefore making it more likely for emotional behaviors to leak through (Brinke et al., 2012).

Importance of Lie Detection
         As the fear of security threats and other attacks underlined by lies increases, the desire for accurate lie detection has grown rapidly and become of high importance (Mann et al., 2014). Vrij, Mann, and Leal (2013) state that recent emphasis has been placed on developing interview techniques that will aid in enhancing the detection of deception cues. Further research into cues for deception (The Global Deception Team, 2006; Mann et al., 2013) has become very popular quite rapidly. It is no longer an interest to being able to detect lies, but rather a need in today's society.

<div align="center">

Detecting Deception

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         Although there have been many different ways suggested to detect lies, for the purpose of this paper three different deception cues are discussed: manipulation of the face, behavioral measures, and eye contact.

Manipulation of the Face
         Manipulating one's face in order to hide a certain emotion is common. Children are taught to hide emotions at a very young age, such as telling a child to smile at the man who

helped his/her mother with her groceries, even when the child is scared of the strange man, is a simple, yet effective, example of manipulating emotions. Facial expressions are not always easy to control but Porter and Brinke (2008) suggest that there are three different ways of manipulating a face: simulating, masking, and neutralizing. When an expression is simulated, it means that the expression displayed is not true, at least there is no true emotion present. A simulated expression would be something similar to showing happiness for someone when really you do not care or have an opinion. When an expression is masked, it means that the expression displayed is different from the emotion that is truly felt. A masked expression would be like showing happiness for someone when really you are angry with them. At last, when an expression is neutralized, it means that the true expression is withheld while the face is manipulated to display nothing. A neutralized expression would be like showing no emotions when really you are angry with someone (Porter & Brinke, 2008). Ekman and Friesen (1975) also discuss managing the face in order to hide the truth the same as Porter and Brinke, but they use different terms such as "falsifying", which is the same as simulating, "modulating" which was the same as masking.

Behavioral and Facial Measures

Although knowing that manipulation of the face is possible when detecting lies, there are other cues to consider as well. Humans use such cues as vocalizations, facial expressions, and body movements to communicate emotions (Sauter, Eisner, Ekman & Scott, 2010). Vocalizations during deception often means that a person speaks differently while lying, such as using a higher or lower pitch than normal, or speaks faster or slower than a normal pace. Speaking faster often indicates a rush to get words out before they are forgotten, whereas speaking slower indicates rehearsal of words and the fear of forgetting the story is present (Ekman et al., 1991). Each person varies in vocalization during deception. Ekman et al. (1991) also suggest that facial and body movements, as well as vocal measures are used for emotional expression. Mann et al. (2013) describe an example of a specific body movement: a hand gesture, which is also known as an illustrator in deception research. This type of gesture differentiates liars from truth teller usually because people use illustrators when they are struggling to find what words they must say next. This is common when someone is telling a lie because he/she is creating it is being told.

Nevertheless, this paper focuses on facial expressions and lies. Stel, van Dijk, and Olivier (2009) suggest that true emotional expressions differ from false emotional expressions by the muscles that are used. They also differ in the intensity, duration, and timing of the used muscles (Stel, van Dijk, & Olivier, 2009). Being able to understand facial trustworthiness through subtle facial cues is a great aid in deception, however, as a result of facial manipulation, Okubo, Ishikawa, and Kobayashi (2013) suggest that faking a facial expression such as a smile can be quite easy for liars, again depending on the stakes of the lies and how well-thought out the lie is.

Eye Contact

A common belief around the world when it comes to lies is that liars avoid eye contact. Headed by Charles Bond, this is the goal of an international group of researchers from 58 countries who refer to themselves as the Global Deception Team. The main interest of this team was to study beliefs about cues of deception as they interviewed 20 female and 20 male adult residents in each of the 58 countries involved (Mann et al., 2013). The Global Deception Team (2006) found that the statement "liars avoid eye contact" was mentioned in all of the 75 countries

within the study. Mann et al. (2103) found that gaze aversion was the most commonly mentioned belief in 51 of the 58 countries they studied.

There have been a few studies conducted to focus on this belief; however it has been found that it is merely just a stereotype. People are just as likely to avoid eye contact when they are telling the truth as when they are lying (The Global Deception Team, 2006). Mann et al. (2013) used two groups of participants (truth tellers and liars) and separated the groups into two separate rooms. They had the truth tellers write a story in one room and the liars "copied" their story and used it in the other room. When asked by the interviewer to tell the story, the liars used deliberate eye contact significantly more than truth-tellers, and they also made a point to mention to the interviewer that they did use eye contact more (Mann et al., 2013). Liars have openly admitted that they look for eye contact on purpose in order to convince the judge/interviewer of what they are saying (Mann et al., 2013). There are two reasons why liars look for eye contact: they want to seem more convincing based on the eye contact stereotype and they want to be able to observe whether the other person believes them or not (Mann et al., 2013). Although many believe that eye contact is something that liars avoid, this stereotype needs to be reconsidered.

Conclusion

When you think back to the questions that were posed in the beginning, whether your mother knows if you are telling lies or not by looking at your face, the basic and simplest answer to this would be "yes". However, unless your mother has an extreme amount of knowledge about Ekman and Friesen's (1975) six basic emotions, such as anger or disgust, as well as what physically happens to your face during the expression (Ekman et al., 1991), it would be very difficult for her to be accurate. There is no doubt that someone can indeed pick up on lies based on facial cues such that Vrij Mann, and Leal (2013) suggested, micro-expressions that occur 1/5 – 1/25 of a second, and eye contact like in the police lie detection study by Mann et al. (2013), however there is a lot of information that is needed in order to be able to do so effectively. The best advice for lie detection is to become aware of what happens with the face when someone tells the truth, in order to know when it does not match what occurs when someone tells a lie. There is no doubt that someone can become a master at lie detection, but like many things, there are a great amount of skills and knowledge to be had.

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The Prevalence of Mental Illness in the Prison System: Understanding Contributing Factors

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According to a Statistics Canada (2009a) report, 6.3% of the total Canadian population had been diagnosed with a mental illness at the time of data collection; an increase from 5.3% in 2003. The prevalence of mental illness in the general population differs from the prevalence in the prison population, as demonstrated in the data on mental health status and prevalence of mental illness in prisons collected by The Correctional Service of Canada (CSC). The CSC is a division of the Canadian Government that incarcerates and rehabilitates convicted criminals who are sentenced to a minimum of two years in prison (Public Safety Canada, 2007). In a report, "The Corrections and Conditional Release Statistical Overview", it was found that in 2007, 10% of prison inmates had a diagnosed mental illness at the time they were admitted into prison (Public Safety Canada, 2007). This percentage did not include prisoners with substance abuse problems. Furthermore, even though 10% of inmates were diagnosed with mental illness, 21% of prisoners required and were prescribed medications for a mental illness, an increase of nearly 11% since 1998 (Public Safety Canada, 2007).

The number of cases of mental illness has increased significantly among the incarcerated population since the 1960s, with the number of people admitted into prison with mental illness in 2004 60% higher than in 1967 (Sanding Senate Committee, 2006). If substance abuse was included in this comparison, than the increase would be 84% (Sanding Senate Committee, 2006). This dramatic increase is likely due, in part, to a more thorough screening for mental illness, as there is now a greater focus on mental illness in prisons. It is also, in part, an attempt to provide inmates with the proper treatment required to be productive members of society. Furthermore, with changes to the *Diagnostic and Statistical Manual for Mental Disorders*, diagnostic criteria have evolved and includes symptoms of mental illness that may not have been included in previous editions. People who did not fit the criteria for mental illnesses in the 1960s may now be diagnosed with a mental illness.

In the United States, the Bureau of Justice is a department of the federal government that enforces federal law. A Bureau of Justice Statistics report from 2005 showed that 56% of state prisoners and 45% of federal prisoners had mental health problems (Lim et al., 2008). Another Bureau of Justice Statistics report in 2006 suggested that 64% of inmates had a recent incident of mental illness, findings based on personal interviews with the inmates (Lim et al., 2008). One potential explanation for such a high prevalence rate in the US prison system in comparison to Canadian prisons may be a difference in healthcare in Canada and the US. In the US, unlike Canada, health care is not free to its citizens and therefore treatments available within prisons in the US are very basic, and many inmates do not receive any form of mental health care (Smith, 2014). However, in Canada health care is free to its citizens including incarcerated citizens. Therefore, inmates in Canadian prisons are likely to receive better mental health treatment than those in US prisons.

Post-traumatic stress disorder (PTSD) is a mental illness present in the prison system, with almost one third of prisoners diagnosed with PTSD at any given point (Kubiak, 2004). This

is compared to 8% of the general Canadian population experiencing PTSD in their lifetime (Kubiak, 2004). Since the percent of individuals in the Canadian general population experiencing PTSD in their lifetime is 8%, it is likely that at any given point less than 8% of the Canadian general population is experiencing PTSD (Kubiak, 2004). Furthermore, there is a high rate of comorbidity of mental illness among prisoners; those suffering from PTSD are also likely suffering from other forms of mental illness (Steadman, Osher, Robbins, Case, & Samuels, 2009).

Contributing Factors to Higher Prevalence Rates

History of Abuse

People in the prison system are more likely to have been victims or witnesses to psychological, sexual, or physical abuse in childhood than the general population (Walsh, Gonsalves, Scalora, King, & Hardyman, 2012). Fifty percent of female inmates have reported that they were victims of childhood sexual abuse (Walsh et al., 2011). As well, 70% of those women who reported being victims of childhood sexual abuse also reported being revictimized in their adult lives prior to being imprisoned (Walsh et al., 2011).   Witnessing or being victim to such traumatizing events can cause psychological harm, particularly in young children, which increases the risk for mental illness.

Sexual abuse as a child, as well as other forms of childhood abuse such as physical abuse, psychological abuse, and neglect can predict whether someone will be revictimized as an adult outside of prison and while incarcerated (Beck, Harrison, Berzofsky, Caspar, & Krebs, 2010). This risk of revictimization is compounded when the victim suffered multiple types of abuse (Messman-Moore & Brown, 2004). Those with mental illness and those in prison have a higher incidence of childhood abuse, therefore, abuse may increase an individual's risk of being both incarcerated and being vulnerable to mental illness (Walsh et al., 2012).

Gibson et al. (1999) found that that 68% of their sample of 273 male prisoners self-reported some form of early childhood victimization. Inmates were selected from three state prisons and one jail in New England, with an average age of 32 years. Eighty-one percent of the sample was Caucasian, with the remaining sample split between Native, African American, and "other" (Gibson et al., 1999). A structured interview was used to assess the presence of mental illness, including a description of up to three traumatic events that were witnessed. In this sample, 33% met the standards for a lifetime diagnosis of PTSD and 21% met the standards for current PTSD (Gibson et al., 1999). Inmates who met the standard for a diagnosis of both lifetime and current PTSD were significantly more likely than other inmates to also meet the criteria for major depression, anxiety disorders, or antisocial personality disorder (Gibson et al., 1999). The results of this study showed that inmates were more likely to discuss events that happened to them as children and did not mention traumatic events in adulthood (Gibson et al., 1999).

Criminalization of Mental Illness

The Canadian Mental Health Association (2004) states that those with mental illness are more likely to be arrested for nuisance offences such as trespassing or resisting arrest, than the general population. The stigma associated with mental illness may further put ill individuals at risk of arrest. Those with mental illness are often more visible because their behaviours are seen as abnormal and people take notice of them.   As a result a decision is frequently made to incarcerate these individuals (Link & Stueve, 1995). In Toronto, Ontario in 1998, it was

documented that 66% of homeless people were diagnosed with a mental illness (Statistics Canada, 2009b). This was nearly three times the rate of mental illness in the general population of Toronto at the time (Statistics Canada, 2009b). Since homeless people are often on the street, they are more visible than other individuals and are often arrested more frequently than other offenders of nuisance crimes. (Arboleda-Florez et al., 1996). Not only are they arrested more frequently but they also lack the resources to post bail or hire a lawyer (Davis, 1992). Due to these factors, homeless people are more likely to be sent to prison.

People with mental illness may unintentionally commit misdemeanors due to a lack of supervision or an inability to recognize the criminal component of their actions (Powell et al., 1997). In other cases mentally ill individuals may clearly recognize their actions as criminal and be aware of the consequences. In this case, those who choose to commit misdemeanors, often do so to be arrested and "housed" within the prison (Davis, 1992). Prisons provide food, a warm place to stay, and might even provide other activities that they do not otherwise have access to, such as access to the prison gym (Davis, 1992).

Many people are in prison serving time when they would be better suited for a secure forensic unit in a psychiatric hospital. The money that is being used to run these prisons at maximum capacity could arguably be better used to treat mental illness in the general population. By treating mental illness in the general population, the likelihood of mentally ill individuals becoming incarcerated may decrease. These people would better benefit from treatment than imprisonment, especially since it is shown that mental illness is exacerbated in prison.

Sometimes people with mental illness lack the resources to get the medications and other forms of treatment they may require. Because of this many turn to self-medicating using alcohol or other drugs. Drug and alcohol use increases the risk of incarceration. This is due to the fact that many substances are illegal, and/or influence people to do illegal things. In these cases, when an individual with mental illness is arrested, the courts must decide if the individual should be given treatment or be incarcerated.

Higher rates of mental illness among incarcerated individuals are related in part to the criminalization of mental illness, instead of the treatment or rehabilitation of ill individuals (Powell et al., 1997). The criminalization of mental illness is more likely to occur in circumstances where there are a lack of supports and treatment options for the mentally ill (Powell et al., 1997). The recent report, "Out of the Shadows at Last: Transforming Mental Health, Mental Illness and Addiction Services in Canada" (Correctional Service Canada, 2012), was the first in-depth look at mental health issues in Canada (Correctional Service Canada, 2012). The Canadian Mental Health Association (2009) reported that the increasing number of inmates with mental illness was at least partly explained by the lack of government knowledge or effort to help those with mental illness. The report stressed the need to implement a strategy to help those with mental illness who come in contact with the corrections system (Correctional Service Canada, 2012).

Sexual Assault

Sexual assaults are thought to be quite prevalent in the prison system, however, similar to the general population, sexual assaults are often under reported (Griffiths & Cunningham, 2010). In 2006, in the US, there were over 6000 sexual assaults reported within prisons (Beck, Harrison, & Adams, 2007). Though sexual assaults are prevalent, there appears to be little institutional effort to initiate the prevention of these assaults (Walsh et al., 2012). With a lack of prevention, sexual assaults may greatly affect the overall mental health of the incarcerated community.

There are many psychological consequences to unwanted sexual experiences. Sexual assaults in prison have been linked to PTSD, depression, substance abuse, and suicide (Walsh et al., 2012).

Sexual assaults in prison occur in a range of situations. Inmates may use their intimidating stature, gang connections, and threat of violence to coerce other inmates into performing sexual acts or offer incentives such as protection from other inmates (Griffiths & Cunningham, 2010). In both situations, the unwanted sexual act may be considered the least objectionable option. Although the prisoner may consider it a less negative alternative, performing an unwanted sexual act can contribute to deteriorating mental health.

Violence

Physical assault is also prevalent in prisons. It is estimated that 10% to 20% of inmates have been physically assaulted and 33% have been threatened with assault, but, as with sexual assault, the actual numbers are likely much higher (Griffiths & Cunningham, 2010).   In prison, inmates get into fights and may even be killed over something as trivial as stealing a bag of chips (Griffiths & Cunningham, 2010). Inmates are likely to engage in violence when they feel wronged or when they feel their status has been threatened (Griffiths & Cunningham, 2010). Other reasons inmates engage in violence include to obtain drugs, or material goods or for enjoyment (Griffiths & Cunningham, 2010). In such an unstable environment, with so much violence, many inmates are subjected to or witness traumatizing situations, which can cause or exacerbate mental illness, especially PTSD.

In prison, a person's self-respect and dignity are denied by constant exposure to dehumanizing conditions (Griffiths & Cunningham, 2010). When a person first arrives to prison they are subjected to rituals to remove them from their place in society and transform them into an inmate. Some of these procedures include removing their clothes and personal belongings and giving an identification number. They have limited access to the outside world, only through letters, phone calls, and limited visits (Griffiths & Cunningham, 2010). This can have a negative effect on an individual's mental health.

Inmates living within an inmate subculture are expected by their criminal peers to follow the inmate code (Garofalo & Clark, 1985). These are the rules of the subculture that govern the interactions between inmates, as well as between inmates and staff (Goff, 2008). The rules include staying out of other people's business, not tattling on other inmates, avoiding owing debts to other inmates, and not sharing too much information about one's personal life (Garofalo & Clark, 1985). The code also requires inmates to be loyal to their inmate peers, not steal from other inmates, not break their word, not complain, and not side with the prison guards (Goff, 2008). For those who have not been previously incarcerated it can be difficult to know how to act without getting into trouble and they must learn the code through their own experiences (Garofalo & Clark, 1985). If an individual has trouble deciphering or abiding by the inmate code, conflicts begin to arise often ending in violence. This violence can sometimes be severe and traumatizing, which clearly impacts mental health (Garofalo & Clark, 1985).

There is also evidence that mental illness may precipitate the violence. Some of those who initiated these violent attacks were previously diagnosed with psychosis or severe personality disorders (Goff, 2008). In these situations, inmates sometimes warned the prison staff of their history of violence and their lack of control over it. Furthermore, the inmates informed the staff that they, at some point, may attack them, due to their perceived lack of control (Goff, 2008). Attacks such as these usually occurred during times when the prisoner was

experiencing heightened stress, such as denial of parole (Goff, 2008). In other instances, the violent behaviour was seen as completely unpredictable and out of character.

Insufficient Treatment

Prisoners, like any member of society, have a right to healthcare, which includes mental healthcare (Steadman et al., 2009). Presently, inmates do not receive the psychological help they need (Steadman et al., 2009). Prisons contain many people with many unique problems and different needs. Some prisoners have been diagnosed with mental illness before entering the prison and others are diagnosed while incarcerated (Correctional Service Canada, 2012). It is important that the prison provide an appropriate level of mental health treatment that is directed at each inmate's specific needs. Furthermore, it is important to have a treatment plan available for the individual upon release from the prison (Correctional Service Canada, 2012).

People who are mentally ill are more likely than those who are not mentally ill to get caught in a cycle of entering prison, being released, committing another crime, and entering prison again. This is likely due to a lack of community supports when mentally ill individuals are released from prison (Standing Senate Committee, 2006). In an attempt to address the issue of mental illness, The Correctional Service of Canada (2012) has developed newer and better ways of detecting mental illness when an offender is first admitted to a prison. An assessment is done on an individual to develop a treatment plan and a treatment plan is put in place for that individual when the individual is paroled (Standing Senate Committee, 2006).

The "Mental Health Strategy for Corrections in Canada", is a new strategy being implemented in the corrections system across the country. Its aim is to provide effective treatment to inmates with mental illness and build community supports for mentally ill inmates (Correctional Service Canada, 2012). The main focus of this plan is to ensure that treatment started before incarceration is continued while incarcerated, and that treatment that is started while incarcerated is continued upon release (Correctional Service Canada, 2012). Another goal is to have communication between federal, provincial, or municipal institutions so that there will be communication of treatment and progress of an individual who has been incarcerated with the different institutions (Correctional Service Canada, 2012).

Many people both in prison and in the general population fear the stigma associated with mental illness. People with mental illness in the prison system experience two types of social stigma; one for their mental illness and one for the crime they committed (Correctional Service Canada, 2012). The desire to avoid the stigma associated with being mentally ill prevents many people from seeking treatment, therefore, another factor in the new mental health program is aimed at reducing the stigma attached to mental illness both within the prison and within society (Correctional Service Canada, 2012).

Conclusion

The presence of mental illness is higher in the prison population than the general population due to contributing factors that include history of abuse, criminalization of mental illness, sexual assault, violence, as well as insufficient treatment. In recent years there has been a push for better treatment for those with mental illness within prison. The plans being implemented for the mental health of prisoners are still very new and it remains to be seen how these plans will help the long-term mental health of inmates. Although the government is heading in the right direction, it is possible that with the increasing number of prisoners and the

increasing prevalence of mental illness within prison, it will be difficult, if not impossible, to meet all the mental health needs of inmates.

Further research is needed to assess the effectiveness of the New Mental Health Strategy. Researchers should compare the mental health of inmates being treated with the new program to inmates who were imprisoned before the time of program implementation. As well, researchers could look at recidivism rates for mentally ill inmates. If recidivism among those who are mentally ill decreases than this may be an indication that the program is helping individuals to better function in society. Future research should also be aimed at improving the mental health strategy already in place. No matter how good the current strategy is, there are always other more efficient and effective ways to help improve a person's mental health.

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Attention Deficit Hyperactivity Disorder (ADHD) in an Educational Atmosphere

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Abstract

The focus of the present research is to analyze reading and math academic achievement of school-aged children with Attention Deficit Hyperactivity Disorder (ADHD). Educational interventions that can be implemented into the school setting to help these children succeed will also be addressed. Students with ADHD show lower performance in reading comprehension, and story retelling and lower performance in tasks of math are shown in problem solving and multiplication. Lower performances have also been reported in boys and between the different subtypes of ADHD. In order to help these children succeed it is important that any implemented educational interventions target the deficits these children experience and provide accommodations in the classroom. By targeting the deficits and providing accommodations the child's potential to succeed and experience gain in academic achievement is maximized.

Attention deficit hyperactivity disorder (ADHD) is associated with the symptoms of severe and inappropriate levels of inattention, hyperactivity, and impulsivity (Purvis & Tannock, 1997). Previous research on this has reported that ADHD affects about 3 to 5 % of school-aged children with a greater number of male children diagnosed with ADHD compared to female children, with ratios reporting to range from 4:1 to 9:1 (Hallahan et al., 2010; Merrell & Tymms, 2001). It has also been reported that ADHD is one of the major contributors in the referral of school-aged children to clinics or to school guidance counselors (Hallahan, Kauffman, McIntyre, & Mykota, 201; Merrell & Tymms, 2001). This referral typically results from the classroom presence of the behavioral problems expressed by children who suffer from this disorder. Through certain educational interventions, children with ADHD can improve their academic performance on tasks of reading and math.

ADHD is often diagnosed through a medical exam and a clinical interview (Hallahan et al., 2010). Additionally, tools such as teacher and parents rating scales may also be used to facilitate a professional diagnosis, as they help to gain a better understanding of the behavior displayed by the child and how he or she acts in various settings, such as at home and at school. As a first step, these ratings scales may be helpful in identifying children who need to be referred to a professional for a diagnosis however, clinical interviews, when possible, provide distinct advantages by understanding the dynamics between the child, family, and peers (Hallahan et al., 2010).

Perhaps the most important tool utilized by clinicians in the diagnosis of ADHD is the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders V (DSM-V) (APA, 2013). The DSM provides a list of criteria to be used by professionals to aid in the diagnosis of ADHD. The DSM makes reference to three subtypes of ADHD, making it easier for a professional to provide an accurate diagnosis and lead into a better catered treatment (APA, 2013). The first subtype, ADHD predominately inattentive, not surprisingly involves the display of inattentive behavior. Such behavior would include failing to give close attention, does not listen, and is easily distracted and forgetful. The second subtype,

ADHD predominately hyperactive-impulsive, involves behavior that is hyperactive and impulsive (APA, 2013). Such behaviors would include fidgeting, runs or climbs in situations where it is inappropriate, talks excessively, and has difficulty waiting his or her turn. The final subtype, ADHD combined, is a combination of the first two with individuals here tending to display symptoms of inattention, hyperactivity, and impulsivity (APA, 2013; Hallahan et al., 2010; Merrell & Tymms, 2001). It is believed that the inattentive and combined subtypes of ADHD will experience greater failure and more problems in school than children with the hyperactive and impulsive subtypes (Zentall et al., 2012).

 In order for a child to be officially diagnosed with ADHD, and classified into one of the subtypes, not only must he or she display a couple of these behaviours, but rather the individual must either meet six of the symptoms of inattention or meet six or more of the symptoms of hyperactivity- impulsivity. Further, these behavioral symptoms of inattention or hyperactivity-impulsivity must persist for at least six months and occur before the age of seven. As well these symptoms must occur to a degree that is maladaptive and inconsistent when compared to the developmental norm for the child's age level (Hallahan et al., 2010; Merrell & Tymms, 2001). Additionally, for a diagnosis of ADHD to be made, the child must display the symptoms across two or more locations, such as home and at school (Hallahan et al., 2010; Merrell & Tymms, 2001).

The symptoms of inattention, hyperactivity, and impulsivity cause many school-aged children to struggle in a formal school setting. This struggle manifests in both academic achievement ratings and the presence of social problems. It has been shown that this struggle can also lead to the child displaying more delinquent and antisocial behavior in combination with the lowering of academic performance (Loe & Feldman, 2007; Merrell & Tymms, 2001). Often this will lead to children availing of school-based services, such as special education and remedial services (Zentall, Tom-Wright, & Lee, 2012).

The present literature research will address educational implications and interventions that can be implemented into the school setting to help children, who are diagnosed with ADHD, experience higher scores on areas of academic achievement, particularly in reading and math. Interventions to help teachers and other professionals control the behavioral problems expressed by these children will also be discussed.

Reading and Language

Reading is a process that involves aspects of fluency, comprehension, and accuracy (Alvarado, Puente, Jimenez, & Arrebillage, 2011). The reading problems faced by children who are diagnosed with ADHD may be linked to reading fluency, which includes reading accuracy and rate (Zentall et al., 2012). Reading comprehension, which includes the literal comprehension or the recall of words such as who, what, and when, can partially explain reading problems among children with ADHD (Miller et al., 2013; Purvis & Tannock, 1997; Zentall et al., 2012). Another important subdivision is reading accuracy, which includes the translation of symbols or letters into sounds and spoken words. Reading speed may also be used as an assessment tool to measure ADHD effects on reading (Zentall et al., 2012).

Previous research has found that, when reading a passage, performance by males with ADHD is slowed compared to that of their same age female peers and this is attributed to children with ADHD, particularly boys, experiencing a lower enjoyment and involvement in reading (Zentall et al., 2012). It is also believed that because children with ADHD read at a

slower rate than their peers, they are also at risk for experiencing difficulties with reading comprehension (Zentall et al., 2012). Reading comprehension problems in children with ADHD may be associated with the language requirement for holding information in memory. Children with ADHD perform poorer and experience problems with reading comprehension when the passage is long, when there are interruptions in the story, and when the story passage includes elements of cause and effect. Reading silently is also problematic in children with ADHD, because when reading silently, information will often be skipped leading to poorer comprehension scores (Zentall et al., 2012).

Story retelling is another important reading comprehension ability and measuring it allows researchers to gain a better understanding of the difficulties associated with reading ability in children with ADHD. It is an important area to study because it requires the child to attend to the incoming information and to the importance of the story in order to recall the story elements (Purvis & Tannock, 1997; Zentall et al., 2012). When retelling a story, children with ADHD have a greater difficultly in recalling elements of the story, particularly events that occurred at the beginning or end of the story, compared to their peers. The inability to recall elements of a story may be caused by the attentional issues these children experience and their failure or inability to hold verbal material in memory. This possibly suggests that problems with verbal working memory and sustained auditory attention are potential contributing factors (Zentall et al., 2012).

Another study that examined the ability of a child with ADHD to recall stories found that these children exhibit difficulties in how they organize and monitor the verbal production of story elements (Purvis & Tannock, 1997). These difficulties of organizing and monitoring seem to be related to deficiencies in higher-order executive functions (Alvarado, Puente, & Arrebillage, 2011; Purvis & Tannock, 1997). An important connection exists between reading and executive functions possibly because the development of both occurs around six to eight years of age (Alvarado et al., 2011). Because of the problems associated with the organization of verbal production, children with ADHD tend to produce more errors, included more inappropriate word substitutions, and recalled less information when retelling the story. This finding was associated with an apparent breakdown in the organization of the story's theme and this misrepresentation of information often reflects pragmatic (language use) difficulties (Miller et al., 2013; Purvis & Tannock, 1997). The problems associated with pragmatic difficulties can also be illustrated in the behavioral problems of children with ADHD, such as the inability to maintain a conversation or to take turns during a conversation (Purvis & Tannock, 1997). An example of how behavioral problems affect children's performance would be in the number of times the child looks away from the task, in the physical activity and movements of the child, and the vocalizing the child exhibits (Zentall et al., 1994).

Other studies of school-aged children with reading problems have found that problems may stem from difficulties with encoding the information rather than problems with decoding the information. This is often apparent when these children experience difficulties with the identification of written words (Miller et al., 2013; Zentall et al., 2012). To understand the problems with working memory and decoding (i.e., difficulty identifying written words), studies assessed the ability of children with ADHD to build coherent mental representations that allowed them to recall central and peripheral information (Miller et al., 2013). It was found that these children show a centrality deficit, as indicated by a greater inability than their peers in the recall of central information. This central deficit may be related to the reduced attentional resources of children with ADHD that impairs their ability to form text connections, which in turn does not

allow the central information to emerge in their text representation (Miller et al., 2013). This central deficit is likely related to the difficulty children with ADHD experience expressing information compared to peers in the recall of central information. It may occur because children with ADHD are unable to form connections between the text's ideas due to the child's limited cognitive resources to sustain attention. This, in turn, makes them unable to form the necessary connections when attempting to comprehend the text and the ideas (Miller et al., 2013).

As previously mentioned, reading comprehension difficulties are related to poor attention, suggesting that the different subtypes may differ (Cain & Bignell, 2013). Children with the inattentive and combined subtype perform more poorly on tasks of reading comprehension than their peers who are hyperactive, likely due to an inability to sustain attention. The poor reading comprehension may also be related to an inability for children with ADHD to read written words, and due to the longer amount of time needed to process complex sentences (Cain & Bignell, 2013).

Children with ADHD also experience problems with comprehending figurative language and answering inferential questions (Miller et al., 2013). It is also believed that children with ADHD may exhibit problems associated with psycholinguistics, including phonological (i.e., sounds), metaphonological (i.e., the ability to manipulate speech sounds auditorily), morphosyntactic (i.e., morphology and syntax) and semantic (i.e., meaning attached to words) processing. Problems associated with visual perceptual deficiencies, such as visuospatial coordination, recognizing spatial differences, and right- left orientation may also be attributed to lower reading achievement of children with ADHD (Alvarado et al., 2011). Problems such as speech-production, lexical access, and the inability to use phonological information of spoken language that children with ADHD exhibit have also been documented and attributed to problems with metacognitive functions (Alvarado et al., 2011).

The reading problems children with ADHD experience are attributed to holding information in memory and reading speed. If a passage is long, includes interruptions, and elements of cause and effect a child with ADHD may be at risk for reading problems. Reading silently often contributes to reading problems. Sustained auditory attention, verbal working memory, executive functions, and pragmatic (language use) difficulties seem to be related to story retelling problems. Off-task behaviour, such as physical activity is a form of pragmatic difficulties and leads to problems with reading. Children with ADHD also experience difficulties with encoding and show a centrality deficit. The inattentive and combined subtypes experience greater reading difficulties than the hyperactive subtype.

Besides from problems with reading ability, children with ADHD will also experience lower achievement in mathematics. The inability to read a passage, the inability to recall the information that was read, deficits in memory and deficits in executive functions may contribute to the lower performance of children with ADHD during mathematical tasks. The symptoms of ADHD and the off-task behaviours that are displayed by the child during reading may also contribute to the child's lower performance in mathematics.

Mathematics

The effect of ADHD on mathematical performance has been a growing and well-documented area of research since the reform movement of mathematics over the past fifteen years (Benedetto-Nasho, & Tannock, 1999; Lucangeli & Cabrele, 2006). School-aged children who are diagnosed with ADHD seem to struggle in the area of mathematics at a much higher rate

than their peers (Zentall et al., 2012). Poor performance on mathematical tasks are often reported in a lower number of correctly completed items, poorer accuracy, and an inefficiency in the task of subtraction, particularly when the subtraction involves negative numbers and borrowing (Benedetteo-Nasho & Tannock, 1999; Zentall et al., 1994; Zentall et al., 2012). The decreased accuracy rates in mathematics are typically attributed to the aforementioned reading comprehension problem; however, slower calculation speed is another factor that contributes to the lower performance (Zentall et al., 1994; Zentall et al., 2012). This slower speed of calculation contributes to the poorer mathematical performance largely because they only complete half the number of calculations (Benedetteo-Nasho & Tannock, 1999; Zentall et al., 2012).

Mathematical problem solving is also reported to be an area of difficulty for students with ADHD, likely because it is a complex task that involves reading, math language, mental representation of the problem, procedural steps, and deriving solutions, all of which need to occur at approximately the same time in order to complete the problem (Zental, Smith, Lee, & Wieczorek, 1994; Zentall et al., 2012). Math problem solving also includes the cognitive processing of text and mental or graphic representation, which requires the use of working memory and inhibition processes to select the relevant information (Lucangeli & Cabrele, 2006). During tasks of problem solving, slower word problem performance, attributed to a reading recognition problem, leads children with ADHD to often select inappropriate information and use inappropriate procedures to complete the problem (Zentall et al., 2012). To further exacerbate the problem, the off task behaviors of children with ADHD that are exhibited during problem solving tasks contribute to the lower academic achievement (Lucangeli & Cabrele, 2006). It is not surprising then that children who are diagnosed as predominately hyperactive-impulsive perform more poorly on word problem solving than children who are classified as inattentive (Lucangeli & Cabrele, 2006).

Multiplication problems involving distance, money, and set seem to present an even greater complication to children with ADHD. The failure to complete problems associated with multiplication may be related to the inability and difficulty children with ADHD experience in the organization of temporal and spatial events (Zentall et al., 1994).

Previous research has reported that the mathematical problems children with ADHD often exhibit are attributed to an insufficient effort these children apply to the task performance (Zentall et al., 2012). The so-called lack of effort applied to mathematical tasks is probably not an effort issue at all and is instead due to a self-regulatory deficit associated with executive function impairment. A child is often asked to behave in a way that allows for the construction of learning goals, and self-regulation, or self-monitoring, is important in order to meet the goals (Zentall et al., 2012). Because children with ADHD experience a cognitive capacity that is significantly diminished compared to peers, they are unable to self-regulate and are unable to delay their response to many task types, including mathematical tasks (Zentall et al., 2012).

Self-monitoring is believed to be helpful in teaching children with ADHD to succeed academically (Bulut, 2005). This technique involves having the child with ADHD record how many times he or she left his or her seat during the class period (Bulut, 2005). Research on self monitoring or self regulation strategies to helping children with ADHD show that the intervention can decrease the inappropriate behaviors these children often display and increase the amount of classwork these children complete. The accuracy on classwork is also increased with children engaged in self-monitoring or self-regulation techniques (Schultz et al., 2011).

Research has also suggested that the lesser mathematical performance is a motivational problem unrelated to any specific cognitive deficiency that the child may experience (Zentall et

al., 2012). It has been proposed that children with ADHD have a strong desire for immediate reward and are therefore more vulnerable to the distractive effects of rewards. Since tasks of mathematics do not provide the child with an immediate reward, they are less likely to willingly engage in this task and be more distracted and frustrated when there is no reward (Zentall et al., 2012). It seems to be an inadequate physiological activation related to their abnormal response to reward, punishment, and delay (Zentall et al., 2012).

Sustained attention may also be a contributor to the lower math achievement of school-aged children with ADHD (Zentall et al., 2012). Because children with ADHD are unable to sustain sufficient attention on tasks of math to develop automatic retrieval, these children must depend on immature methods of retrieval, such as finger counting. The method of retrieval is a contributing factor to performing difficult math tasks that requires the holding of important information in mind, such as borrowing and negative numbers (Zentall et al., 2012). Predictably, this deficiency is more severe in children with ADHD who were not hyperactive compared with children with hyperactivity (Benedetto-Nasho & Tannock, 1999; Lucangeli & Cabrele, 2006). Research has also found that children who are inattentive also struggle to solve math problems when the irrelevant information overloads their cognitive system and crowds working memory capacity, which in turn limits the child's ability to solve mathematical problems (Lucangeli & Cabrele, 2006). Another reason for the difference found in inattentive children is a failure in automatization. That is, a failure to automatize computational skills at an age appropriate pace which impairs the acquisition of numerical information and inhibits the child from learning more advanced mathematical procedures (Benedetto-Nasho & Tannock, 1999).

As with reading and language skills, the disruptive behaviors of impulsivity and hyperactivity are associated with the impairment of academic achievement in math (Lucangeli & Cabrele, 2006). Research has stated that the disruptive behaviors exhibited by children with ADHD may affect school performance and impair their function more than the cognitive deficits do (Lucangeli & Cabrele, 2006). Fitting with the increased prevalency rates of impulsivity and hyperactivity in males, boys with ADHD show significantly lower mathematical abilities, a slower computation time, and a lower conceptual understanding of math problems (Lucangeli & Cabrele, 2006; Zentall et al., 1994).

Another factor contributing to the lower performance on tasks of math of children with ADHD, yet one that is often ignored, is teachers' perceptions of academic skills (Lucangeli & Cabrele, 2006). Teachers' perceptions of academic skills is an important contributor in effectively improving the child's academic performance and the interventions that will be implemented. These interventions focus on improving the child's academic skills while reducing the symptoms of ADHD.

Educational Interventions

Due to the problems children who are diagnosed as having ADHD experience in the school setting, it is important that interventions be in place to help these children succeed at a rate equal to their same aged peers (Priffner, Villodas, Kaiser, Rooney, & McBurrnett, 2013). Furthermore, by working closely with ADHD children, one can, on top of academic benefits, also have positive impacts on the symptoms the child displays. The educational interventions that need to be implemented into the school setting often include measures to target the behavior of the children while others include interventions focused on building skills in these children (Priffner et al., 2013).

There are a number of educational interventions that have been implemented into the school setting, producing a variety of positive results in children with ADHD. Successful interventions include collaborative life skills program (CLS), daily report cards or home-school notes, physical accommodations, such as a seating arrangement, allowing the child to work in small groups, and coaching. Functional behavioural assessment (FBA), Contingency based management (CBM), and a combination of the two, have proven to be successful in helping children with ADHD succeed. Teachers spend numerous hours working with ADHD children and therefore the success of an ADHD child is highly factored by the help of their teacher. The teacher is able to provide help to the child by providing organization, rules and structures, by the use of hand gestures and their attitudes and opinions.

The Collaborative Life Skills Program (CLS) is one such educational intervention that has been developed to close the gap between research and practice (Priffner et al., 2013). This program involves the delivery of behavioral teacher consultation, the use of daily report cards, behavioral parent training, and child social and life skills training. When this program was used, school children with ADHD showed significant improvement from pre-treatment to post-treatment. Particular improvements were found in the symptoms of ADHD, organizational skills, and homework problems (Priffner et al., 2013). Significant treatment effects were also found for a number of academic outcomes, which included teacher ratings, report card ratings, measures of reading and math, and student engagement (Priffner et al., 2013).

The use of daily report cards or home-school notes can benefit school-aged children with ADHD without the use of CLS (Schultz, Storer, Watabe, Sadler, & Evans, 2011). These daily report cards, or home-school notes, are often defined as an individualized behavior plan that rewards the positive behavior in a designated problem area for the individual student. The behavior that is to be targeted is selected for each student, and the teacher then rates these behaviors on a regular basis, usually daily (Schultz, 2011). At the end of the day, the student with ADHD would take these notes home to his or her parents and when the stated goals are met, the parent then provides the child with a reward. This intervention technique produces positive changes in the child with ADHD, which again includes an increase in teacher ratings, parent ratings, and general classroom functioning while also seeing a drop in conduct problems (Schultz, 2011).

Although there is little or no empirical evidence, it is believed that physical accommodations in the classroom may help these children focus their attention (Bulut, 2005). One such physical accommodation is having a set seating arrangement. Sitting a child close to the teacher will be beneficial to the child because the number of student-teacher interactions will be increased, the child will be less likely to wander off, and will be more likely to stay on task. Related to this, being seated close to the teacher allows the teacher to help bring the child back on task. Additionally, having a seating arrangement will allow the child to be placed in a location that is quiet and free from distractions (Bulut, 2005). Assumptions into classroom seating arrangements has also believe that increasing the distance between desks and placing the student near good peer models to be effective strategies to improve performance. However, it is vital to remember that when implementing a seating arrangement, the child with ADHD should not feel isolated from his or her peers (Bulut, 2005).

Working in small groups of peers also appears to be another effective strategy (Bulut, 2005). By working in small groups, the child with ADHD receives more one-to-one assistance and this one-to-one assistance allows the teacher to offer more help, correction, and feedback (Bulut, 2005). Positive effects of peer tutoring also reflect the benefit of working in small groups

(Schultz et al., 2011). When a student with ADHD engages in peer tutoring their classroom behavior, prosocial behavior, and academic performance seem to improve (Schultz et al., 2011).

Functional Behavioral Assessment (FBA) is found to be one of the most successful teaching techniques for teaching children with ADHD (Bulut, 2005). This assessment procedure involves determining the consequences, antecedents, and setting events that lead to the maintenance of inappropriate behaviors in children with ADHD (Bulut, 2005). Research on the use of FBA has found that when behavioral interventions are customized to fit the needs of the students with ADHD, their classroom may be more effective than interventions implemented without such a consideration (Schultz et al., 2011). Contingency Based Management (CBM) is another productive method of helping children with ADHD to become successful in the classroom (Bulut, 2005). This procedure involves having the child keep track of his or her own behavior and then receive the appropriate consequences (Bulut, 2005). Research suggests that a combination of FBA and CBM has been successfully used in increasing appropriate behavior of a child with ADHD (Bulut, 2005).

Another useful technique to increase the academic performance of children with ADHD is coaching (Bulut, 2005; Hallahan et al., 2010). This technique involves identifying a support person that the child with ADHD can rely on. This support person can either be a therapist, a teacher, or a friend. Once a support person is identified, he or she spends ten to fifteen minutes each day helping the child with ADHD focus on his or her goals (Bulut, 2005; Hallahan et al., 2010). The identified coach or support person provides the structure to the child with ADHD in order for the child to plan for upcoming events and activities. The coach provides praise to the ADHD child when tasks are accomplished (Hallahan et al., 2010).

It is also believed that by placing an ADHD child in a classroom that contains structured daily schedules, where the teacher provides instructional methods, can be very beneficial to the child with ADHD (Bulut, 2005). Because children with ADHD have trouble organizing tasks and activities, placing them in a classroom that has a reliable system of external controls, such as well-defined rules and schedules, will benefit the child by providing a sense of reassurance. It is also important to warn a child of a change in the schedule in advance to avoid upset (Bulut, 2005).

A number of teacher specific factors, such as being organized, providing rules and structure, hand gestures, and attitudes and opinions have been found to profoundly influence children with ADHD in the school setting (Bulut, 2005; Sherman, Rasmussen, & Baydala, 2008). It has been suggested that the teacher's knowledge of ADHD is the most significant factor in helping children with ADHD succeed in the school setting and in the classroom. This, along with a teacher's response to the symptoms of ADHD, will in large part determine a child's success in school. When teachers react with a more preventative outlook and believe that behavior can be changed with the help of the parents and interventions, the child with ADHD will benefit (Sherman, Rasmussen, & Baydala, 2008). Educating teachers about ADHD will help these teachers deal with the challenges and frustrations associated with teaching an ADHD child and, by doing so, increase a teacher's effectiveness in interacting with the child (Bulut, 2005; Sherman et al., 2008).

Because of the structure that is needed in order for children with ADHD to succeed, it is also important that the child's teacher be organized (Bulut, 2005). A teacher who is positive but firm, that defines expectations very clearly, and sticks to them, will likely provide the ADHD child with the greatest number of benefits (Bulut, 2005).

Remarkably, besides providing rules and structure, the hand gestures used by teachers in coordination with speech during instruction can provide positive gains in academic achievement for the child (Sherman et al., 2008). The use of hand gestures is of particular importance because of the benefit it provides to children with ADHD in learning additional information that is usually not available because of their inability to remain attentive (Sherman et al., 2008).

Teachers' attitudes and opinions towards treatment and invention strategies are also important when addressing the academic outcome of children with ADHD (Sherman et al., 2008). A teacher who is able to engage students in the task, focus on academic goals, and provide immediate feedback is most suitable for working with ADHD children. It is also believed that teachers having a positive attitude toward student inclusion and working with other professionals are important characteristics for a teacher to have when working with children with ADHD, particularly when working to help the child succeed and perform higher on tests of academic achievement (Sherman et al., 2008). The teacher's perception of treatment can impact what support the child will receive in the classroom and the extent to which a teacher will refer a child to other professionals (Sherman et al., 2008).

Discussion

Children who are diagnosed as having ADHD show significant underachievement, poor academic performance, and educational problems (Merrell & Tymms, 2001; Loe & Feldman, 2007). These children may also find that they are more dependent on school based services, such as placement in special education classrooms, and experience high rates of detention and expulsion. It is believed that by studying the impacts of ADHD on a child's school performance, one can discover interventions that can help the child succeed at a rate closely resembling peers (Loe & Feldman, 2007).

The academic difficulties that children with ADHD experience are reported to begin early in life. Some studies report that children who are three to six years of age and exhibit symptoms of ADHD are more likely to be behind in basic academic readiness skills (Loe & Feldman, 2007). In agreement with previous research, it has been found that children with ADHD perform below that of their peers (Merrell & Tymms, 2001). It is also believed that children who exhibit high ratings on the scales that measure ADHD behavior will score significantly lower on tasks of reading and math, given their ability (Barry, Lyman & Klinger, 2002; Merrell & Tymms, 2001). Children who score high on the combined and predominantly inattentive subtypes were reported to have negative academic progress, whereas those children who were hyperactive/impulsive did not differ as greatly (Merrell & Tymms, 2001). The inattention element associated with ADHD is an important contributing factor to the problems children who are diagnosed as having this disorder experience in tasks of reading and math (Merrell & Tymms, 2001).

Problems associated with the executive functions of children, which are the cognitive abilities necessary for the children to complete complex goal-directed behavior and be able to adapt to a range of environmental changes and demands, seem to affect the child's academic performance in tasks of reading and math (Barry, Lyman & Klinger, 2002; Raggi & Chronis, 2006). Because of deficits associated with the child's executive function, he or she is unable to plan, organize, and unable to maintain problem solving abilities in order to reach a goal. Children with ADHD are also unable to inhibit a response or defer a response, and are unable to represent a task mentally, which are often defined as problems associated with the dysfunction of executive functions (Barry et al., 2002). A problem of the executive functions in tasks of

mathematics is an area of concern for researchers because of the significant underachievement that was found (Barry et al., 2002). Executive functions have also been found to be related to the reading problems of children with ADHD and contribute to the child's lower academic achievement (Alvarado, Puente, & Arrebillage, 2011; Purvis & Tannock, 1997).

Because of the struggle and academic underachievement associated with ADHD it is important a child exhibiting this disorder engage in educational interventions that address school achievement, such as peer tutoring (Barry et al., 2002). It is believed that by addressing the behavioral symptoms associated with ADHD, the child will then reach his or her potential in the classroom (Barry et al., 2002). Interventions that seem to produce benefits in the child with ADHD include peer tutoring, instructional and task modification, functional assessment procedures, and self-monitoring (Raggi & Chronis, 2006).

Academic interventions that provide the children with academic engagement are believed to result in better performance for students with ADHD than interventions with passive attentional requirements (Raggi & Chronis, 2006). By employing active engagement interventions, the teacher, or other professionals who work with the child, may be able to increase the child's attention span and allow for deeper information processing, which can in turn increase task accuracy (Raggi & Chronis, 2006). Another important goal of introducing interventions to the child with ADHD is to decrease distractions and reduce the amount of non-relevant stimuli that the child focuses on (Raggi & Chronic, 2006). A final benefit of using interventions to treat ADHD would be the ability to provide one-to-one instruction or the ability to tailor the intervention to meet the needs of the child and improve his or her academic performance (Raggi & Chronis, 2006).

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Intellectually Disabled Children: Are They Perceived to be Reliable Eye Witnesses?

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Abstract

This paper discusses eye witness testimony and children who have been diagnosed with intellectual disabilities. It looks at the perceptions that judicial workers have of children with intellectual disabilities and their abilities to provide accurate eyewitness testimony. Jurors' perceptions were looked at through a study that used mock jurors to determine if they viewed the children with intellectual disabilities as competent witnesses. Perceptions that police officers have were also looked at through earlier studies performed by others. It was noted that findings from several studies were inconsistent and that children with intellectual disabilities are not given the amount of credit they deserve.

Over the course of the judicial process, people are often asked to provide either verbal or written statements that may concern a crime that they may have witnessed. The criminal justice system often employs the use of eyewitnesses to seek justice for criminal offences. However, the credibility of an eyewitness's memory can be impacted by many factors including the length of time between witnessing the event and testifying; the quality of the initial memory, and the overall accuracy of the statement provided (Roberts, 2002). This can raise questions about the reliability of a statement, especially when the witness is a child and even more so when that child has an intellectual disability (Roberts, 2002). Children, when placed on a witness stand, are often perceived to be incompetent witnesses which in turn can lead to their testimonies being viewed as unreliable (Aarons, Powell, & Browne, 2004; Brown & Lewis, 2013; Brown, Lewis, Lamb, & Stephens, 2012; Ericson, Perlman, & Isaacs, 1994; Henry & Gudjonsson, 2004; Henry & Gudjonsson, 2007; Henry, Ridley, Perry, & Crane, 2011; Peled, Iarocci, & Connolly, 2004). Children may also be more susceptible to suggestibility in their testimonies, but this will typically depend on the age of the child (McWilliams, Narr, Goodman, Ruiz, & Mendoza, 2013).

Being placed on a witness stand or asked to provide a testimony for an event can be stressful to a child, particularly a young preschool-aged child (McWilliams et al., 2013). However, eyewitness testimony is important and often crucial, especially when there is little or no tangible evidence present in a case (Roberts, 2002; McWilliams et al., 2013). This paper will examine the veracity of the common perception that children with intellectual disabilities make for poor eyewitnesses by looking at the factors that affect accuracy and recall of provided statements, and the perceptions of children with intellectual disabilities from those directly involved in the criminal justice system, namely police officers and judges.

During a crime, if a child is present, they have the potential to be asked to testify as a witness (Goodman, Golding, Helgeson, Haith, & Michelli, 1987). The ability of a child to provide a reasonable and reliable testimony, however, is a topic of debate (Bidrose & Goodman, 2000) since there are a number of reasons that children are often deemed unreliable eyewitnesses (McWilliams et al., 2013). These reasons revolve around event and witness characteristics (McWilliams et al., 2013), and may include age, abilities of memory recall, suggestibility, ability to communicate, interviewer and types of questions, and the amount of consistency that is

present in their statements (Bottoms, Nysse-Carris, Harris, & Tyda, 2003; Brown et al., 2012; Ericson et al., 1994; Henry, 2001; Kail, 1990, McAfee, Cockram, & Wolfe, 2001; McWilliams et al., 2013; Moss, 1998; Swanson, 1990).

For example, if the child has witnessed a personally upsetting event, then they have the potential to remember more details, as opposed to an event that was less upsetting or considered common (McWilliams et al., 2013). Additionally, if a child witnesses an event that is personally significant, it is likely that they will be able to provide more information and reliable details (McWilliams et al., 2013; Quas et al., 2010). Quas et al. (2010) completed a study that viewed long-term memory for documented experiences. They used participants that had originally given statements during their childhood, approximately fourteen years prior (Quas et al., 2010). The results, a stronger memory trace for the court proceedings, suggested that the greater distress during legal experiences and testimonies may have caused the information to be encoded more durably (Quas et al., 2010). This seems to be a moderately consistent finding as it seems that stress is often positively associated with memory accuracy (Quas et al., 2010). In another study that looked at child's memory for stressful events, it was found that children who experience more distress are the children who typically remember details at later times (Goodman, Hirschman, Hepps, & Rudy, 1991).

Intellectual disabilities often result from a deficiency in mental capacities which affect the everyday abilities and functions of individuals, and are usually apparent prior to the age of eighteen (Weiten & McCann, 2013). Intellectual disabilities can are often classified into four categories depending on the degree of disability: mild, moderate, severe, and profound (Weiten & McCann, 2013). The Mild level is characterized by an IQ range of 51-70 whereby the individual is unlikely to reach an education level above grade 6 (Weiten & McCann, 2013). Here the individual is capable of being self-reliant providing the environment is stable and supportive (Weiten & McCann, 2013). The Moderate category of intellectual disabilities is indicated by an IQ range of 36-50, with the individual unlikely to reach no more than a grade level of 2-4, and special education would be necessary (Weiten & McCann, 2013). Individuals in the Moderate category are not fully self-reliant but can be more independent in a sheltered setting (Weiten & McCann, 2013). An individual who is diagnosed with a Severe levels of intellectual disability are typically characterized by an IQ of 20-35, and are very limited in most cognitive abilities including speech and systematic training (Weiten & McCann, 2013). They require total supervision, under which they could contribute to their independence (Weiten & McCann, 2013). The fourth, and most profound level of intellectual disability, would see an individual with an IQ below the 20 point mark (Weiten & McCann, 2013).

As previously mentioned, children are often viewed as being incompetent of delivering reliable eyewitness details and are, thus, not fully believed by others both in everyday life and in the justice process (Brown & Lewis, 2013; McWilliams et al., 2013). This is especially true for children who are affected by intellectual disabilities (Gordon, Jens, Hollings, & Watson, 1994; Perry & Wrightsman, 1991), although there is a scarcity of information on the accuracy and completeness of testimony in children who are affected by intellectual disabilities (Gordon et al., 1994). It has, unfortunately, been established that children with intellectual disabilities have a higher potential to be victims or witnesses to crimes than typically developing children (Brown & Lewis, 2013; Henry et al., 2011; Reiter, Bryen, & Shachar, 2007; Westcott & Jones, 1999). Since a child with an intellectual disability is often assumed to have an underdeveloped memory (Bottoms et al., 2003; Kail, 1990), they are not seen as having the ability to report a crime or tell

details of what they saw, and criminals may believe they have an opportunity to do as they please because of this shortcoming (Ericson et al., 1994).

This paper will focus on children with intellectual disabilities and their abilities to recall accurate information by presenting the factors that could potentially affect the accuracy and recall of the child's testimony, as well as discussing perceptions of these children. The perceptions that jury members and police officers have of children with intellectual disabilities will be mentioned and discussed. This is important because their perceptions could impact any decisions that are made about a conviction. Overall, this paper will focus on the perceptions of child witness with intellectual disabilities in the judicial system.

Impact on Accuracy and Recall

There are many reasons why children with intellectual disabilities could have a lowered ability to provide accurate details for an event could be jeopardized (Brown et al., 2012). The children who are affected by intellectual disabilities may have poorer encoding capabilities, thus, creating problems such as not allowing them to process information at a normal speed or reducing the amount that is processed, or having a poorer understanding for an event (Bottoms et al., 2003; Brown et al., 2012; Henry, 2001; Kail, 1990; Swanson, 1990).They could also experience issues with communicative abilities, preventing them from sharing the details for the event that they did witness (Brown et al., 2012; Ericson et al., 1994; Moss, 1998). Age can contribute to children with intellectual disabilities being perceived negatively since a younger child is viewed as less competent and more unlikely to provide accurate details (McWilliams et al., 2013). These potential issues could lead to negative perceptions of children with intellectual disabilities and make their accounts appear to be unreliable.

Children with intellectual disabilities are often perceived as unreliable witnesses but there exists evidence to the contrary (Brown et al., 2012). Findings have noted that children with intellectual disabilities are just as able as typically developing children in recalling accurate information when provided with the proper questions and assessments (Brown et al., 2012). Thus, it is essential to a child witness, especially one with an intellectual disability, that they have a strong and knowledgeable interviewer (Aarons et al., 2004). A good interviewer can help a child provide a more accurate account of the event and thus provide the court with reliable and valid information (Aarons et al., 2004). It is recommended that the level of communication between the child and the interviewer be similar, and that open-ended questions be utilized in the interview process (Aarons et al., 2004). The information provided via open-ended questions has been shown to be equally accurate for intellectually disabled and typically developing children in terms of details (Brown et al., 2012; Gordan et al., 1994; Peled et al., 2004).

The notion that intellectually disabled children are unreliable witnesses could potentially be due to the lack of consistency in their responses to questions during an interview or court trial (Ericson et al., 1994). In turn, this lack of consistency could be attributed to the improper questioning of individuals with intellectual disabilities (Ericson et al., 1994). When a child with intellectual disabilities is questioned more carefully, it could lead to these children being seen as more able and competent witnesses (Ericson et al., 1994). Intellectually disabled children often have problems with understanding or communicating with the interviewers of the case and these abilities may be hindered, not only by their cognitive abilities, but also by possible auditory, visual, and speech impairments (Ericson et al., 1994). It is essential that the child be provided with the proper communication aids. Children who have been diagnosed with intellectual disabilities may not fully understand the meaning of words or questions that are being asked,

which provides the potential for the child to answer the question based on their own interpretation (Ericson et al., 1994). Also, intellectually disabled children may have difficulty with questions that are long, have run-on sentences, and/or have multiple questions stated in a bigger question (Ericson et al., 1994). This may cause the child to forget details, misinterpret questions, and/or only answer one of the multiple questions that have been asked (Ericson et al., 1994). Thus, communicative issues should be considered and they should be provided with the level of assistance necessary for them to produce a strong and reliable account of an event (Ericson et al., 1994).

Age can also be seen as a factor that may influence the perceptions of children with intellectual disabilities. At young ages, it is unlikely that children have the necessary abilities to accurately recall information (McWilliams et al., 2013), although research suggests that with age children's memory gains accuracy and decreases the possibility of suggestibility (McWilliams et al., 2013). Also, depending on how soon after the event a child is interviewed, their accuracy and completeness could be heightened or hindered (McWilliams et al., 2013). A child that is questioned close to the time of the event may be able to produce details that are more accurate and complete, whereas a child that is questioned several days or weeks later may be able to still recall details, but their details may lack the accuracy that could have been provided if they were questioned at an earlier time (McWilliams et al., 2013).

Perceptual Views of Children with Intellectual Disabilities

When typically developing children are placed on a witness stand it can be challenging for jurors, police officers, and sometimes the general public to perceive the child as a reliable memory source for a witness testimony (Aarons et al., 2004; Goodman et al., 1984). Young children, when asked to provide a testimony, are seen as having an inability to provide credible details, however, they are viewed as being honest and more innocent compared to older adolescents (Bottoms et al., 2003; Goodman et al., 1984). As a child becomes older the perception that they are honest and naïve to event details (particularly in a sexual abuse case) becomes lowered (Bottoms et al., 2003; Brown & Lewis, 2003). In addition, children with intellectual disabilities may or may not be perceived as being similar to typically developing children when they are asked to provide an accurate and detailed recollection of a particular event (Bottoms et al., 2003; Brown & Lewis, 2003). Furthermore, race and gender have also been found to influence the perceptions of children that are placed on a witness stand (Bottoms et al., 2003). Not surprisingly however, the strongest characteristic that negatively impacts people's perceptions of children witnesses is the presence of an intellectual disability (Bottoms et al., 2003).

Like typically developing children, children with intellectual disabilities are thought to be more honest and trustworthy, but have significantly poorer cognitive abilities when compared to older children and adults (Bottoms et al., 2003). With that said, being seen as honest and trustworthy tends to be more important to court employees than having stronger cognitive abilities (Bottoms et al., 2003; Goodman et al., 1984). Like previously discussed, children who have been diagnosed with intellectual disabilities are usually perceived as naïve, and this perception is exacerbated when the child is involved in court cases about sexual assault or abuse (Bottoms et al., 2003; Brown & Lewis, 2013). It is suggested that this could essentially be because they have no sexual education or only a very basic level of knowledge (Bottoms et al., 2003). A child's ability, to provide an accurate witness statement, whether they are a typical developing child or have been diagnosed with intellectual disabilities, has changed the attitudes

and perceptions of many people over time (Goodman et al., 1984). The perceptions of jurors and police officers, as well as the general public, may be negatively influenced by the presence of an intellectual disability in a child (Brown & Lewis, 2013; Gordon et al., 1994; McWilliams et al., 2013; Perry & Wrightsman, 1991).

When entering a courtroom setting, jurors may have biased ideas about children as witnesses (Goodman et al., 1984). These ideas often result from the type of case, type of witness testimony presented, amount of time passed since the event, but predominantly it is the characteristics that the child may possess which influence a juries perception of testimony veracity (Goodman et al., 1984). As a result, having a child witness, more specifically a child witness who has been diagnosed with an intellectual disability, may influence the decisions of the jury during a court case (Brown & Lewis, 2013). The opportunity to obtain a conviction may be compromised if the jurors have biased ideas about the abilities of the child witness (Goodman et al., 1987).

In a study performed by Bottoms et al. (2003), it was predicted that jurors who tend to view children with intellectual disabilities as having similar cognitive skills would be more accepting and believe the testimonial accounts that were presented by the intellectually disabled child witnesses. This mock trial study had 160 participants watch a video of an actual trial. They found that the mock jurors made different judgments of the child's testimony based on if the child was labeled as having an intellectual disability or not (Bottoms et al., 2003). If the witness was portrayed as being disabled, the participants of the study perceived the victim as being more honest, and unable to provide false details in the testimony (Bottoms et al., 2003). Further, participants were more believing of younger children's claims and the claims of children with intellectual disabilities thus making them more likely to convict the accused (Bottoms et al., 2003). This study is important when looking at children with intellectual disabilities and how they should be more accepted as reliable throughout the judicial system. It is important as children with intellectual disabilities are often perceived to be less reliable than what they actually are (Bottoms et al., 2003). In this study, children with intellectual disabilities appear to be more accepted by those who work in the judicial system (Bottoms et al., 2003). These children are not always given the credit that they deserve when it comes to the tasks that they are capable of doing (Bottoms et al., 2003).

When looking at children with intellectual disabilities and the perceptions that jurors have of these children, it is also possible that the jurors may perceive the children as incompetent witnesses. Henry, Ridley, Perry, and Crane (2011), looked at perceived credibility of child witnesses with intellectual disabilities compared to typically developing children. Their study again used mock jurors who viewed a short video clip to in an attempt to determine the perceptions that they had of children witnesses with intellectual disabilities (Henry et al., 2011). The study produced the opposite findings to the study by Bottoms et al. (2003) in that mock jurors were found to perceive children witnesses with intellectual disabilities as less reliable (Henry et al., 2011).

Police officers are usually the first people to interview the child that witnessed a crime or an event (McAfee, Cockram, & Wolfe, 2001; Perry & Wrightsman, 1991). However, there are very few cases that may advance to a court setting when children with intellectual disabilities are present (Aarons et al., 2004). This may be because children, especially those who have been diagnosed as having intellectual disabilities, are seen as being incompetent of providing reliable details for an event by those who work in the judicial system (Aarons et al., 2004). Police officer perceptions of children with intellectual disabilities and their abilities to accurately recall details

for an event have a tendency to be negative (Brown & Lewis, 2013). Police have been found to form perceptions about the individuals which they are interviewing before the interview even takes place (Aarons et al., 2004). This initially happens because of past encounters they have had with other individuals (Aarons et al., 2004). This could include interviews that were completed with child witnesses in the past in which police officers had undesirable experiences, which can leave them to think of child eye witnesses from a negative perspective (Aarons et al., 2004). Most police officers have not received the information or training that should be necessary when working with intellectually disabled children (Goodman & Helgeson, 1985). This leaves them to practice the guidelines they are taught to use when working with adult witnesses (Goodman & Helgeson, 1985).

In a study that was performed by McAfee, Cockram, and Wolfe (2001), police officers perceptions were looked at. To look at these perceptions McAfee et al. (2001) asked police officers to provide their responses to crime reports, in which victims or accused were said to have an intellectual disability. This study had found that police officers had biases of individuals with intellectual disabilities (McAfee et al., 2001). The results indicated that the perceptions that police officers had were found to be influenced, specifically if there was an intellectual disability present in the witness or victim (McAfee et al., 2001). The presence of an intellectual disability, unfortunately, determined how the officers handled the event (McAfee et al., 2001). McAfee et al. (2001) had concluded that police officers could be susceptible to the influence of stereotypes.

Conclusion

Eye witness testimony is frequently used in cases that lack concrete evidence (Robert, 2002; McWilliams et al., 2013). Sometimes individuals are asked to provide verbal or written statements about a witnessed crime; sometimes these individuals could be children who may be asked to provide details of the event that they observed (Goodman et al., 1987). However, this often includes children with intellectual disabilities because they have more potential to be witnesses than typically developing children (Brown & Lewis, 2013; Henry et al., 2011; Reiter et al., 2007; Westcott & Jones, 1999). Children, especially those who have been diagnosed with an intellectual disability, are often perceived as being incompetent of providing accurate and reliable details which may cause them to not be believable witnesses (Brown & Lewis, 2013; Brown & Lewis, 2013; McWilliams et al., 2013). This is particularly true when looking at the perceptions from those who work in the judicial system (Aarons et al., 2004; Goodman et al., 1984).

Jurors and police officers may be perceptually swayed by the presence of a child with an intellectual disability (Brown & Lewis, 2013; Gordon et al., 1994; McWilliams et al., 2013; Perry & Wrightsman, 1991), thus, children with intellectual disabilities may be seen negatively by these judicial workers (Aarons et al., 2004; Goodman et al., 1984). This may be due to the lack of knowledge about the abilities of children with intellectual disabilities. Children with intellectual disabilities are not always given the credit that they deserve when they provide eyewitness testimony (Bottoms et al., 2003), and this may also be because of the lack of education about intellectual disabilities in children. It may be necessary that those who are employed with the judicial system be provided with the necessary knowledge and programs that allow them to learn and further their knowledge of intellectually disabled children.

Henry et al. (2011) had found that children with intellectual disabilities are unable to provide the amount of details for an event that a typically developing child would be able to provide when free-recall is used to interview them; although, they were found to have the ability

to produce accurate details for the event that they had witnessed. However, there have been many studies which have found inconsistent results, like the studies previously mentioned by Bottoms et al. (2003) and Henry et al. (2011). These studies show inconsistent findings about the perceptions of intellectually disabled children and their ability to recall events (Bottoms et al., 2003; Henry et al., 2001). A strong conclusion about the perceptions of children with intellectual disabilities and their ability to provide accurate eye witness testimony cannot be formed at this time because there is conflicting findings within the studies. Because of these inconsistent findings, it can be concluded that more research needs to be performed. If further research opportunities become available, it would be essential to ensure that the research is carried out in a way that produces results that are more clear and reliable.

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Alexithymia: An Overview

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Background

Alexithymia affects the way the afflicted experience emotional states of others and express their own emotions. Alexithymia, broken down into its Greek etymology, aptly defines the disorder: "a" as a prefix means lack, "lexis" means word, and "thymos" translates to emotion (Taylor, 1984). Before the term Alexithymia was first defined in 1972, the concept was being examined as evidence, in 1948, by Ruesch and MacLean who reported a curious lack of emotions in a number of patients (Taylor, 1984). Taylor (1984) later described the various symptoms that were found in Alexithymics which included troubles with: recognizing and describing feelings, explaining the difference between emotional states and body sensations, tendencies to experience few dreams and fantasies, and there were examples of the sufferers getting angry or crying without being able to explain why. There could also be a lack of facial movements but Alexithymics tend to seem well-adapted in social situations and are not usually identifiable without completing a diagnostic questionnaire (Taylor, 1948). Alexithymia has been associated with a wide range of mental disorders including psychopathic disorder, anxiety disorder, panic disorder, and depressive disorder although whether Alexithymia is a cause or a symptom of these disorders is yet unknown.

The current review examines Alexithymia with regards to how it is assessed, its comorbidity with several mental disorders, its etymology, its associations with romantic relationships, and two new treatments for Alexithymia. The review considers limitations and locations of the previous studies in an attempt to show how Alexithymia is widespread yet not fully understood.

Measuring Alexithymia

The primary tool for accessing Alexithymia is the Toronto Alexithymia Scale (TAS), also known as the Toronto Alexithymia Questionnaire (TAQ). There are two variations of the TAS, the TAS-20 and the TAS-26. The TAS-20 uses twenty questions to measure three dimensions: 1) difficulty identifying feelings and distinguishing them from the bodily sensations that accompany states of emotional arousal, 2) difficulty describing feelings to others, and 3) an externally orientated style of thinking (Bagby, Ayearst, Morariu, Watters, & Taylor, 2013). Externally orientated style of thinking refers to an Alexithymics dependence on cues in the environment for how to react emotionally. That is, , a detached explicit cognitive appraisal of the situation dictates the appropriate emotion instead of any implicit or automatic appraisal.

The original test, the TAS-26, included an additional six questions measuring the dimension of fantasies and dreaming; specifically how often, how vivid, and how realistic experienced dreams were. The TAS uses self-report and a Likert scale of measurement which ranges from 1 - strongly disagree to 5 - strongly agree (Bagby et al., 2013). These scores are then added together by predefined question numbers to measure the strength of each dimension. Originally the test was only used offline however Bagby et al. (2013) tested 621 students in a

Canadian university, 300 of which were tested online, and found that there were no significant differences between the two groups showing the validity of the TAS-20 as an online assessment tool. This is important for two reasons. Firstly, it allows for more people to be tested both in and outside the laboratory and secondly, it helps validate the methods of several studies mentioned in this paper.

Comorbidity

To expand on the previous notion that Alexithymia has links to other disorders comes a study by Onur, Alkin, Sheridan, and Wise (2013) completed in Turkey. Onur et al. (2013) looked at 56 healthy control participants and 171 patients in a psychiatric ward of which 40 had generalized anxiety disorder, 54 had a panic disorder, and 77 had major depressive disorder (Onur et al., 2013). All participants completed the TAS-20 and it was generally found that all patients suffering from a disorder scored significantly higher on the TAS-20 than the healthy participants and specifically scored higher on dimensions 1 and 2 (i.e., difficulty identifying feelings and difficulty describing feelings) of the TAS (Onur et al., 2013).

Dalbudak et al. (2013) had 319 (85 males) university students in Turkey complete five questionnaires measuring anxiety, depression, temperament, and the TAS-20. Dalbudak et al. (2013) found that there was no significant difference on the TAS scores between genders although scores of the TAS-20, specifically on dimensions 1 and 2, were correlated highly with social anxiety disorder. Social anxiety disorder sufferers were 3.5 times more likely to suffer from Alexithymia than those with no disorders (Dalbudak et al., 2013). Higher TAS scores were correlated with higher scores on the fear and avoidance scales and also correlated with general anxiety and depression. Further, males with Alexithymia were shown to have less verbal emotional ability, were less likely to be married, and had a lower number of friends (Dalbudak et al., 2013).

These two studies help show why Alexithymia is a serious problem and that any effective treatment should probably include the treatment of the comorbid disorders. They also demonstrate that a further understanding of Alexithymia is needed so that whether Alexithymia is the cause or the effect, or a mixture of both, can be discovered to further aid in its treatment. It must be said that there are limitations of each study though. Onur et al. (2013) did not measure the severity of generalized anxiety disorder, panic disorder, or major depressive order in their patients. Rather, they used the diagnoses from the psychologists at the psychiatric ward who used the DSM-IV criteria for the disorders. The DSM-IV was published in 1994 and does not reflect any advances in psychology mad in the subsequent 20 years. Dalbudak et al. (2013) collected the data at two conservative universities and had more females than males. Additionally there was a higher dropout rate for males which implies either that men were less willing or females were more willing to participate. If men were less willing then they were underrepresented while if females were more willing then they were overrepresented. Additionally if the majority of men are unwilling then the willing ones are a misrepresentation of the overall male population. Further, the differences in dropout rates for each may indicate a deeper underlying dimension of Alexithymia that is unable to be assessed due to the participant attrition.

Language

Wotschack and Klann-Delius (2013) examined the relationship between language and Alexithymia. The study took place in Germany and had 1500 participants. After completing the

TAS-20, the 50 who scored high on Alexithymia were chosen along with 50 of the general population for the rest of the study (Wotschack & Klann-Delius, 2013). The second stage of the study consisted of an interview, two writing pieces about the participants' experiences on high emotional topics, pictures about attachments, and an emotional questionnaire. The interview responses were judged on word count and the diction used, specifically the type of words used and how many of each type were used (Wotschack & Klann-Delius, 2013). There was no difference in word count between Alexithymics and non-Alexithymics but the Alexithymics used less emotive words, either positive or negative, about themselves and about others, there was less variation in emotive words used, and less terms describing physiological changes. There were also less synonyms used, more hesitation, and Alexithymics more frequently omitted questions due to not knowing or not being able to think of anything (Wotschack & Klann-Delius, 2013). These results seemed to indicate that Alexithymics had an underdeveloped schema for emotions. With an underdeveloped schema, Alexithymics lack knowledge and connections between emotional states which impedes future understanding of emotional experiences.

Environmental Influence

Levant, Allen, and Lien (2013) suggested that Alexithymia in men is possibly the result of traditional gender roles which often discourage males from showing emotions. Levant et al. (2013) call this Normative Male Alexithymia and completed two studies to support it. The first study consisted of 258 American men who completed the TAS-20 and the Normative Male Alexithymia Scale (NMAS). The NMAS consists of 20 self-report questions answered with a seven point Likert scale. The NMAS measures Alexithymia with particular regard to traditionally masculine emotional expression. The participants also completed seven other scales which measured depression, positive and negative affect, anxiety, social desirability, emotional self-regulation, attitudes toward emotional expression, and dissociative experiences (Levant et al., 2013). High suppression of emotions was linked to high scores on the TAS-20 while dissociation and repression of emotion were not although high suppression and high negative affect scores were linked to high scores on the NMAS. In a second study by Levant et al. (2013), 85 American men participated in a computer based task. The computer program would showed a series of Xs across the screen, with one priming word flashed on the top row for 100ms and then a set of letters shown on the bottom row until the participant decided whether the set of letters made up a word or a non-word (Levant et al., 2013). The bottom row word belonged to one of three categories: 1) emotive words that were considered non-manly by societal norms, 2) control words which consisted of emotive words considered to be manly, and 3) non-words which were just letters placed together that resembled real words but were not. The Alexithymic group had more errors in performance on the emotive words while there was no significant difference between groups on number of errors on control words (Levant et al., 2013). The Alexithymic group took longer to answer on both emotive and control word groups by an average of over 100ms. There is a question of the validity of the study as it took place as a Christian university so there is an age bias and a possible environmental bias in what is considered manly and what is not. There was no comparison between Western society and other societies with different traditional gender roles. There were more experimental words than control words and the priming word and target words were shown on different positions on the screen. Due to the target words always showing up on the same spot it is possible that the participants only saw the priming words in peripheral vision and thus did not process them. Both studies have the

limitation of not explaining why females experience Alexithymia and would only explain why some males experience it. Normative Male Alexithymia is still an important viewpoint to consider due to its explanation of possible environmental influences.

Biological Influences

Similar to most human constructs, there appears to be both environmental and biological factors at play in Alexithymia. Deng, Ma, and Teng (2013) had 420 female students in China. complete the TAQ-20 after which the 15 highest and the 15 lowest scorers completed depression and anxiety questionnaires. For the experiment there were three types of emotive images used: 1) positive, 2) negative, and 3) neutral and two emotional intensities used: high and low (Deng et al., 2013). Each participant, while fMRI data was collected, completed four runs in which there were five picture sets. In each set there were three pictures of equal intensity and emotion and each set started with one control picture (Deng et al., 2013). There was no depression or anxiety disorders found in any of the participants and no difference in neutral or negative-low conditions between groups. In Alexithymics for the negative-high condition there was less activity in temporal, frontal, and anterior cingulate gyri (Deng et al., 2013). For the positive-high condition there was more activity in the frontal, precentral, and insula gyri (Deng et al., 2013). In the positive-low condition there was more activity bilaterally in the anterior cingulate gyri. Three limitations of this study include small sample size, only females were examined, and that the role of insular cortex is unclear yet was activated for the positive-high condition in Alexithymics. This study helps show that there is a biological difference in the way Alexithymics' brains function compared to non-Alexithymics. While there is evidence supporting both environmental and genetic influences on how Alexithymia occurs it is unknown what the primary cause is. However some of the effects of Alexithymia are known, such as the effects on romantic relationships.

Romantic Attachment

There is a question of whether childhood attachment styles influence relationship attachment styles in adult years. Besharat and Khajavi (2013) suggested that they do and examined attachment styles in relationship to Alexithymia. Four hundred and forty-three high school students from Iran completed a questionnaire assessing attachment style, a questionnaire that assessed defense mechanisms, and a translated version of the TAS-20. A mature defense style was defined as having normal and adaptive defense mechanisms while immature defense styles were the opposite. Besharat and Khajavi (2013) found that Alexithymia scores were negatively correlated with a mature defense style and secure attachments. Alexithymia was positively correlated with neurotic and immature defense styles and also avoidant and ambivalent attachment styles. However, when an Alexithymic had a mature defense style the correlations between Alexithymia and both avoidant and ambivalent attachment styles were decreased (Besharat & Khajavi, 2013). Besharat and Khajavi (2013) suggested that in secure attachments mothers express and respond to emotion as do the children allowing them to learn to identify and express emotions helping to alleviate Alexithymia. They also noted that levels of positive versus negative emotions in the household during maturation can have an effect. Insecure attachments and poor defense styles have negative effects on relationships and, since they are positively correlated with Alexithymia, the results suggest that Alexithymia will also have negative effects

on relationships. When combined with the biological evidence from Deng et al. (2013) the results of this study suggests how Alexithymia can affect attachment and defense styles.

  *Mental Health***.** Holder, Love, and Timoney (2014) examined how the overall poor mental health associated with Alexithymia is influenced by romantic relationship status. In a Canadian study, 437 university students completed five questionnaires related to positive well-being, two questionnaires for negative well-being, the TAS-26, one questionnaire to assess personality traits, and one questionnaire examining perceived relationship quality. Holder et al. (2014) found no gender differences in rate of Alexithymia occurrence with 18.5% of all participants ranking as highly Alexithymic. Alexithymia was positively correlated with negative well-being and poor romantic relationship quality while being negatively correlated with positive well-being (Holder et al., 2014). Romantic relationship quality was positively correlated with positive well-being and negatively correlated with negative well-being. Importantly, it was shown that once romantic relationship quality was accounted for, the correlations diminished (Holder et al., 2014). In other words romantic relationships improved the well-being of Alexithymics.

  Personality was similarly correlated with well-being and covered some of the variance between Alexithymia and well-being. Holder et al. (2014) suggested that Alexithymia may be a maladapative variant of the Big 5 personality traits instead of a standalone trait. The study only looked at personality on a trait level while it is known that personality is not stable across all situations. The largest problem about this study is one that Holder et al. (2014) pointed out themselves. Alexithymics by definition have trouble identifying emotions and, as such, the questionnaires about well-being that focus on emotions may have been improperly filled out. As it stands the study shows a positive for sufferers of Alexithymia in that romantic relationships can help them. The same cannot be said for those who date Alexithymics as they were not surveyed.

  *Breakup***.** Chung and Hunt (2013) examined 189 people online (average age of 26 and 85.7% were from the UK) for symptoms of Post-Traumatic Stress Symptoms (PTSS), Alexithymia, and a recent romantic relationships being ended. The participants filled out a Post-Traumatic Stress Disorder (PTSD) scale and the TAS-20. It was postulated that Alexithymia could be a risk factor for PTSD and that following a relationship end there would be PTSS. Fifty-six of the participants met criteria for PTSD with this group having had more previous traumatic events than the non-PTSD group. The PTSD group also had significantly higher levels of Alexithymia than the non-PTSD group (Chung & Hunt, 2013). There were also more PTSS in the PTSD and high Alexithymic groups following the relationship termination. PTSS was also negatively correlated with well-being. While this study focussed more on PTSD than Alexithymia it shows that PTSD may be a cause of Alexithymia and Alexithymics are more likely to experience PTSS and poor well-being following breakups. Bringing the findings of Holder et al. (2014) into the equation suggests that although relationships may be good for an Alexithymic's well-being it could ultimately lower their well-being if there is a break up. So whether relationships are positive or negative overall for Alexithymics and their significant others is still unanswered and likely depends on the individual. Important relationships being terminated can bring a person to a dark place as can psychopathy.

Psychopathy

Pham, Ducro, and Luminet (2010) examined 39 male patients of a male psychiatric ward in Beligum with all considered able to be tested. Phan et al. (2010) used the Hare checklist to determine that 20 of the patients were psychopaths while 19 were not. The participants then completed the TAS-20. The psychopathic group had lower Alexithymic scores than the control group. The participants scored significantly different on each of the three dimensions of the TAS-20 with dimension 3 having the highest scores (Pham et al., 2010). Both psychopathy factor 1 and 2 were negatively correlated with Alexithymia. Factor 1 had a higher negative correlation (Pham et al., 2010). Psychopathy factor 1 is related to interpersonal characteristics while factor 2 is related to anti-social and impulsive characteristics (Pham et al, 2010). Interestingly it was found that the psychopath group scored higher on emotional intelligence measurements than the control group. Previously Alexithymia was assumed to be associated with psychopathy due to the lack of empathy and difficulties with emotions. This study shows an alternate view of the link between psychopathy and Alexithymia, in that only one type of psychopathy is related. It is a flawed study though as it took place with a small sample size in a mental institution. The control group were also patients in the institution for various reasons and are thus not a good control group. There is also an issue of psychopaths who are not caught, thus giving a biased sample. Another issue with the study is that the group of 39 patients had below average IQ. To validate the findings the study should be repeated with a control group of average people and as many Alexithymics as possible.

Primary Psychopathy. A Canadian study of 37 female prison inmates by Louth, Hare, and Linden (1998) examined the link between psychopathy and Alexithymia. The Hare psychopathy checklist and the TAS-26 were used to evaluate the prisoners. Additionally, interviews were recorded and then independently scored on three dimensions: 1) intensity of emotion, 2) appropriateness of emotion, and 3) sincerity of emotion (Louth et al., 1998). Scores on the TAS-26 were negatively correlated with verbal IQ scores, psychopathy, and appropriateness of emotion in the recording. Scores of the TAS-26 were positively correlated with violent crimes specially dimensions 1 and 2, and also for psychopathy factor 2 (Louth et al., 1998). Between Louth et al. (1998) and Pham et al. (2010) the studies demonstrate that psychopathy on the whole and Alexithymia are not linked but the anti-social and impulsive aspects of psychopathy factor 2 are linked to Alexithymia.

Secondary Psychopathy. Riding and Lutz-Zois (2014) surveyed 100 undergraduates in the United States to find the link between Alexithymia and secondary psychopathy. Primary psychopathy is related to factor 1 psychopathy and secondary psychopathy is related to factor 2. As shown by Louth et al. (1998) and Pham et al. (2010) there was no link between Alexithymia and factor 1 so Riding and Lutz-Zois ignored it. Factor 2 psychopathy was explained to have the anti-social and impulsive aspects and also being prone to negative emotions, and related to being bad at forming emotional bonds with others (Riding & Lutz-Zois, 2014). The TAS-20, the Levenson Self-Report Psychopathy Scale, and three other questionnaires which assessed Borderline Personality Disorder (BPD), emotional regulation, and social desirability were completed by the participants. Alexithymia and psychopathy factor 2 were again found to be positively correlated and when accounted for BPD partially lowered that correlation (Riding & Lutz-Zois, 2014). Emotional dysregulation had no significant effect. As Alexithymia and

psychopathy factor 2 are comorbid it is important to find a reliable treatment to help Alexithymics and society.

Treatment

There are clinical treatments for Alexithymia, such as antidepressants and therapy, but the focus in this paper will be on alternate routes for Alexithymia treatment Lysaker et al. (2013) looked at metacognitive mastery which is basically becoming skilled at thinking about thinking and is similar to meditation. Lysaker et al. (2013) looked at 55 men and 3 women who had a substance use disorder (DSM-IV criteria) in the United States. Participants completed the TAS-20, the Metacognition Assessment Scale Abbreviated version, and two other questionnaires. It was found that 26 of the participants had more than five cluster C traits, which are related to being dependent or avoidant and also obsessive compulsive behaviours (Lysaker et al., 2013). Additionally a higher score on the TAS-20 was positively correlated with more cluster C traits. The TAS-20 scores were negatively correlated with metacognitive mastery level. However, under further analysis only the group with high TAS-20 score and low mastery had more cluster C traits. A high TAS-20 score with high mastery had fewer cluster C traits. While there is a small sample size and a lack of female participants the study's results imply that high metacognitive mastery levels can help reduce harmful behaviours in Alexithymics.

Dancing is a second alternate treatment. Malkina-Pykh (2013) examined 118 participants, 26 of which were male, who had an average age of 36.8 years. The participants completed the TAS-26, the Locus of Control Inventory, Eyseneck Personality Inventory, Body Image Test, and the Personal Orientation Inventory. Alexithymia was found to positively correlate with neuroticism and body image dissatisfaction while negatively correlated with extraversion, both internal and external locus of control, and self-actualization (Malkina-Pykh, 2013). There were a significant difference of Alexithymic scores and personality traits. Those with high Alexithymic scores had different personality traits than those with low Alexithymic scores (Malkina-Pykh, 2013). Rhythmic movement therapy (RMT) is a form of highly structured movement that changes the way people dance to change the way they think. There was a significant improvement of scores in the RMT group (Malkina-Pykh, 2013) in terms of Alexithymia, extraversion, neuroticism, locus of control, body image dissatisfaction, and self-actualization in the RMT group (Malkina-Pykh, 2013). Alexithymia, neuroticism, and body image dissatisfaction scores decreased while extraversion scores increased. Participants felt they had more of an internal locus of control following RMT. The study did not look at correlations between improvements after RMT, so it is unknown whether the dimensions increased independently or together. Another interesting finding is that there was no significant difference in Alexithymia scores by age. Additionally the questionnaires were only completed before and after the RMT so it is unclear whether the difference is due to time, retesting, or the RMT.

Conclusion

There were some issues that plagued every study namely the age and time portions. The majority of studies focussed on university students while one focussed on high school students and the Malkina-Pykh had an average age of 36.8 years but did not specify the ages of the participants. No study was a longitudinal study so the long term effects of Alexithymia are unknown and the stability of Alexithymia is unknown. However Alexithymia has been around

since 1948 and is still studied in 2014 which is 66 years of being noticed. These studies also show that Alexithymia is being studied in Canada, the United States, the United Kingdom, Russia, Turkey, Iran, Belgium, Germany, and China. This shows that it is being noticed worldwide. Treatments are being developed and with every study Alexithymia is understood a little better. Successful treatments can help mediate the PTSS symptoms of relationship dissolution, anxiety, panic, and depressive disorders, and potentially reduce the number and/or effect of psychopaths on society. If society dedicates more resources to Alexithymia research then there will be a better understanding of the causes. Further understanding of Alexithymia would help Alexithymics and their romantic partners cope with the situation while also adding support to the nature versus nurture debate. Further understanding of the causes in regards to nature versus nurture could help society remove traditional masculine gender roles as Normative Male Alexithymia helps show how damaging society can be to the often ignored gender. Once traditional gender roles are reduced then children are more likely to be raised properly and thus have a mature defense style which has a benefit to all romantic relationships. Despite being relatively unknown Alexithymia has far reaching implications.

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