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Coping and Survival Strategies Implemented by Women Who Faced Partner Rapes

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Abstract

This article presents the results of an exploratory study conducted among five young Belgian women (25-year-old in average), former victims of marital rapes who separated from their spouse a few years ago. Five instruments were used in order to investigate our research questions: an anamnestic questionnaire, a semi-structured interview, the Body-Image Questionnaire (BIQ - Bruchon-Schweitzer, 1987), the Multidimensional Inventory of Sexuality (MIS - Snell, Fisher & Walters, 1993) and the Questionnaire on Negative Thoughts and Concerns during Sexual Relationships (QNTCDSR - Ravart, Trudel & Turgeon,1993 - inspired by the work of Beck, 1988). Our results show that, when they have to face non-consensual sexual assaults from a violent spouse, the victims use various verbal and physical tactics to resist their abuser. However, the more important the author's determination is, the less effective the victims' strategies of resistance are. Sometimes, the women have no choice but to suffer these abusive and non-consensual relations which coerce them into setting mental process in order to stand this dehumanizing act. Marital rapes generate significant trauma, especially in the field of sexuality. Most of our subjects react with more or less intense sexual inhibition. Others engage in sexual practices that provoke emotional anesthesia (sadomasochism, multiple sexual relations, etc.) in order to maintain an active sex life. After the separation, the victims prefer to implement strategies of disengagement (minimization, denial, ...) allowing them to avoid the resurgence of painful affects related to the past abuses. However, the use of such defense mechanisms obstructs the access to mental care and therefore to the elements of a potentially life-saving resilience

Keywords: marital rapes, coping strategies, sexual trauma

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Introduction

Domestic violence can be psychological, verbal, physical, sexual, economic and spiritual, but may also takes the form of a deprivation of liberty or homicide (Margairaz, Girard & Halpérin, 2006; Morbois & Casalis, 2000; Raffin, 2007). Whatever its forms, domestic violence is generally defined as instrumental (Rondeau, Brodeur & Carrier, 2001), that is to say, exercised by a spouse in order to impose his domination on his / her partner (Kelili, 2004).

Marital rape is a particularly violent physical, or mental, power grab over the spouse. Two categories of marital rape can be highlighted, themselves divisible into subclasses, depending on the manner and context in which the sexual relationship is imposed on the victim. The spouse may, for example, resort to non-physical sexual coercion, either by invoking the responsibility of any woman in the satisfaction of male desires (social coercion), or by using his influence within the relationship (interpersonal coercion). Nevertheless, the sexual act can sometimes be imposed by force or threat. In this case, various situations are possible: rape is an "extension" of the violence already present in the couple or the rape is "obsessive / sadistic", that is to say, characterized by an excitation of the spouse to the realization of unusual sexual acts or to inflict pain on his partner (Martin, Taft & Resick, 2007).

A study conducted by Dedicated, Amnesty International Belgium and SOS VIOL in 2014 showed that marital rape is not an isolated event. Among 1023 Belgian women surveyed, around 25% declare having been, or being, the object of sexual violence by their spouse. However, a reliable estimation of the conjugal rape rate is complex, particularly because victims do not always recognize their experiences as rape (Martin *et al.*, 2007). Contrary to popular belief, marital rape can affect all women regardless of age, social class, grade level, or sector of employment (Bécour, Vasseur, Chuc & Renaud, 2014).

Rape is a dehumanizing act with profound and lasting psycho-traumatic consequences; it is a symbolic killing of women (Bennice, Resick, Mechanic & Astin, 2003; Bessoles, 2001; Lopez, 2002). These consequences are particularly serious in case of a repeated act and even more when the woman is in a close relation with the aggressor, such as in a conjugal relationship (Boughima & Benyaich, 2012). Despite this, the scientific literature and the media rarely explore this phenomenon when it concerns the conjugal sphere. Many popular myths indeed contest the existence of partner rape (Bennice & Resick, 2003) and prevent the victims from associating their experience with rape (Mgoqi, 2006). On the other hand, works on incestuous rape, rape by a stranger or by acquaintances are relatively numerous. Their results show that 80% of rape victims are at risk of psycho-traumatic disorders such as post-traumatic stress disorder or post-traumatic dissociation (Salmona, 2010). Due to abuse, some victims also suffer from sexual dysfunction (Phillips, 2000), sometimes accompanied by negative feelings about men and sex (Martin *et al.,* 2007). For others, an over-investment in sexuality is observed as well as "unusual" sexual urges (Gauthier, 2009). This trauma can generate behaviors of avoidance of all that concerns, directly or indirectly, the sex (sexual relations, gynecological examinations, flirts, ...), or "dissociating" behaviors (violent or unsafe sexual practices, pornography, substance abuse, etc.), provoking emotional insensitivity and thus allowing the practice of sexuality despite past abuses (Salmona, 2010).

The few studies that focused on marital rapes highlighted that all victims do not resist forced sexual acts. This can be explained by fear of injury, fear of being too weak to defend themselves, belief in "conjugal duty" or fear that their reactions compromise the relationship. Some women nevertheless manage to stand up to their aggressor. Gidycz, Van Wynsberghe and Edwards (2008) implemented a longitudinal study indicating that the use of specific strategies during sexual abuse depends on, among other things, various situational factors such as e.g. the level of aggression by the perpetrator.

When women manage to seek help, they often have to face the social stakeholders' lack of training (Bennice *et al.*, 2003; Bergen & Barnhill, 2006). Therefore, the symptoms induced by partner rape tend to become permanent and cause severe damage to the emotional, social, professional, sexual and family life of the victims (Salmona, 2013). This is why our study aims at exploring the consequences of this violence, particularly in the sexual field, but also the survival strategies that victims try to develop, hoping so that this research will improve the knowledge of the professionals involved in this kind of psychological care.

Methodology

1. Purpose of the research

The purpose of our research was to achieve a better understanding of the traumatic consequences of partner rape and to explore the possible opportunities of psychological support.

2. Research questions

Our research questions were: What are the effects of partner rape on women's sexuality? What are the effects of partner rape on the relationship victims have with their bodies? What are the coping and survival strategies implemented by the victims facing attempted marital rapes? What are the strategies implemented by the victims to cope with the symptoms of rape?

3. Instrumentation

Five instruments were used in order to investigate our research questions: an anamnestic questionnaire, a semi-structured interview, the Body-Image Questionnaire (BIQ - Bruchon-Schweitzer, 1987), The Multidimensional Sexuality Questionnaire (MSQ - Snell, Fisher & Walters, 1993) and The Questionnaire on Negative Thoughts and Concerns during Sexual Relationships (QNTCDSR - Ravart, Trudel & Turgeon,1993, inspired by Beck, 1988).

The anamnestic questionnaire

The anamnestic questionnaire gave us the opportunity to collect information about individual life course. This information was completed by some identifying data (age, education, employment, children, age at the beginning of the violent relationship, duration of the violent relationships). The anamnestic questionnaire authorized us to offer a description of the sample's characteristics.

The semi-directive interview

The semi-directive interview aims at respecting the interpersonal dimension of communication by using a framework of themes to be explored. This is why the interviewer generally has a prepared interview guide. Interview guide helps the researcher to focus on the selected topics without constraining them to a particular format. Our interview guide was centered on topics related to the violence lived during childhood and adolescence, relational context and the occurrence of rape, the awareness of rape, the impact of rape on the relationship to the body and sexuality, current beliefs about rape and coping strategies.

The Body-Image Questionnaire (BIQ - Bruchon-Schweitzer, 1987)

The Body-Image Questionnaire is a self-questionnaire developed by Bruchon-Schweitzer in 1987. It consists of 19 items that assess perceptions, feelings and attitudes induced by or expressed towards one's own body (Bruchon-Schweitzer, 1987). Presented in bipolar form (good / bad health, for example), these items are evaluated on a 5-point Likert scale: 1 = many or often; 2 = rather or quite often; 3 = between the two or neither; 4 = rather or quite often; 5 = a lot or a lot. The final score of the questionnaire is obtained by adding the scores of the subject to the 19 items. The total score varies between 19 (minimum) and 95 (maximum) and can be interpreted as follows:

Table 1: Interpretation of BIQ total score (Bruchon-Schweitzer, 1990; Demets, 2013; Lupant, 2011).

Total Score	Interpretation
Between 19 and 37	Faulty body image
Between 38 and 56	Poorly invested body image
Between 57 and 75	Satisfactory body image
Between 76 and more	Very satisfactory body image

The Multidimensional Sexuality Questionnaire (MSQ - Snell, Fisher & Walters, 1993)

The Multidimensional Sexuality Questionnaire (MSQ) is a self-report instrument designed to measure psychological tendencies associated with sexual relationships. It consists of 60 items evaluating 12 psychological dimensions of human sexuality with 5 items each (Snell *et al.*, 1993). Each item is evaluated on a 5-point Likert scale: 1 = "do not characterize me at all"; 2 = "characterizes me a little"; 3 = "characterizes me more or less"; 4 = "characterizes me enough"; 5 = "characterizes me a lot". The score of each of the 12 subscales is calculated according to a method given by the authors and the total score is the sum of scores for all subscales. The subscale scores equal to, or greater than, 12 reflect the significant presence of the studied dimension (Demets, 2013; Lupant 2011).

The Questionnaire on Negative Thoughts and Concerns during Sexual Relationships (QNTCDSR - Ravart, Trudel & Turgeon,1993, inspired by Beck, 1988).

The Questionnaire on Negative Thoughts and Concerns during Sexual Relationships is inspired by the work of Beck (1988). This tool is used to examine the frequency of

negative thoughts during sex (Trudel, 2000). It has 58 items evaluated on 5 scales: 1) worries about oneself, 2) worries about the other, 3) worries about the relationship, 4) thoughts like "I have to" and " I must" and 5) other negative thoughts. The items are measured on a 6-point Likert scale: 0 = "never"; 1 = "rarely"; 2 = "occasionally"; 3 = "frequently"; 4 = "most of the time"; 5 = "always". It is a clinical tool that was not designed for statistical purposes. The authors did not mention a threshold value from which an interpretation can be made. We will therefore carry out a qualitative analysis (item by item).

4. Sample and research planning

Our sample included five young Belgian women (25-year-old in average), former victims of partner rapes who separated from their spouse a few years ago. We met every woman at their home or in a local belonging to the University (according to their request). First, we got to know each other thanks to the anamnestic questionnaire. This first step also allowed to install a climate of confidence inducing a more serene approach of the next phases. We then asked the participants to fill a consent form and listened to their questions about our research. Finally, the semi-directive interview and the psychometric questionnaires were proposed successively.

Main results and discussion

1. Anamnesis information

Our subjects were about 17.8 years old at the beginning of the violent relationship that lasted on average 3.6 years. All victims suffered repeated marital rapes and other domestic violence. They are all French-speaking and characterized by various levels of education (from none to higher); 3 are unemployed and 2 employed. All are separated from the violent partner (for 3.8 years on average); 3 are living with a non-violent partner and 2 are single. Three subjects are mothers and two of them had a child with the abusive spouse. Their children have an average age of 2.3 years.

2. Psychometric tests and semi-directive interviews

What are the effects of partner rape on women's sexuality? What are the effects of partner rape on the relationship victims have with their bodies?

Except one (S1), all our women hesitate to become involved in new sexual relationships and report experiencing more or less intense sexual inhibition. The main results to the MSQ highlight that S1 has a different profile from our other subjects; she is sexually very active with sadomasochism practices. She explains this choice by the need to regain control over her sexuality (and thus to emerge from victim status).

Table 2: main results of the Multidimensional Sexuality Questionnaire (MSQ - Snell, Fisher & Walters, 1993)

Sub-scales	S1	S2	S3	S4	S5
Sexual estime (/20)	**14**	0	0	11	1
Sexual satisfaction (/20)	**19**	0	0	0	13
Sexual concern (/20)	**12**	8	4	8	8
Sexual depression (/20)	**0**	20	11	16	13
Fear of sexuality (/20)	**8**	16	12	14	16

During the interviews, S1 mentioned that she is able to reach orgasm only through sadomasochism. The young woman reproduces the submission she faced but that time, with a feeling of control. However, her results to MSQ do not fully highlight the significant sexual appetite described: we can therefore hypothesize that the adoption of such a practice is the result of a need to regain control over her sexuality and to free from victimhood. Among the other women, some had also previously experienced a period of "hypersexuality" in which one-night relationships were frequent, considering men as sexual objects.

These two forms of alteration of the sexual desire have been pointed out by Salmona (2010). According to the author, the trauma of rape can actually lead to sexual avoidance behaviors or on the contrary, to dissociative behaviors that generate an emotional insensitivity allowing to have sexual relationships despite suffering. The results to the QNTCDSR confirm that negative thoughts and concerns during sexual relationships are clearly present. In the interviews, some of our subjects emphasized their fear of being raped again as one of the reasons they avoid sex.

Other reasons were also mentioned as a feeling of being sometimes "dirty", a disgust towards men or a repulsion for sex. For Martin *et al.* (2007), marital rape can actually induce strong negative feelings about men and sex.

The results to the Body-Image Questionnaire show that the body image of the victims is altered but the results don't allow us to strictly isolate the consequences of rapes because other elements are taken into account by the test (other violence suffered, especially physical and verbal, and other events such as weight gain, pregnancy, etc ...). Generally, all our subjects are however adverse to bodily experiments. Nevertheless, it should be noted that S1 specifically obtained a high score on the "non-erotic / erotic" item of the first factor: she is therefore the only one to show a certain openness to the sexual order experiences.

Three subjects judge their sexual needs unfulfilled. In interviews, most indicated that they avoid sex, which probably justifies this dissatisfaction. According to Phillips (2000), rape actually causes significant sexual dysfunction such as sexual arousal disorder or difficulty reaching orgasm. Most of our subjects also consider themselves as bad sexual partners, which is probably related to the difficulties mentioned, namely

a more or less intense sexual inhibition or a sporadic absence of desire. According to Martin *et al.* (2007), low self-esteem is indeed often identifiable among victims of marital rape.

None of our subjects believe that their sexuality is mainly determined by events external to themselves and three women even think that her sexual life depends clearly on their own behavior. These remarks can be explained by the ultimatum gave by some new spouses about resolving their sexual inhibition or by the conviction of some who believe that satisfying the partner is a proof of love.

What are the coping and survival strategies implemented by the victims facing attempted marital rapes?

When they are confronted with an attempt at marital rape, the majority of our subjects use what Ionescu, Jacquet and Lhote (2012) call a "vigilant coping". Various strategies are so implemented by our subjects to face the violence of their spouse by controlling or preventing it. Three of them use the "verbal resistance" described by Martin *et al.* (2007) which, according to the authors, is the most frequent strategy applied in such a context. But this verbal refusal doesn't often stop the assault of theirs partners who then forced them (by undressing them, by holding them so that they cannot run away, ...). Most of the victims (4/5) therefore have to struggle and to use the "physical resistance", also mentioned by Martin *et al.* (2007). After realizing the ineffectiveness of this physical opposition, the victims once again turn to verbal strategies such as begging their partner to stop the violence by screaming (2/5) and / or crying (3/5) or by reporting their pain (3/5). According to Gidycz *et al.* (2008), the use of verbal resistance may be related to the degree of physical restraint of the perpetrator. However, this last resort to verbal resistance did not often result in the desired effects and the victims felt that they have no choice but to accept the sexual act. De Puy, Gillioz and Ducret (2002) point out that some victims stop giving up resistance because they know that the energy deployed doesn't put an end to the act of rape.

While their partner abuses them, 4 subjects implement cognitive strategies such as e.g., thinking of nothing ("closing their eyes" or "fixing the void"), focus their thoughts on the end of the act and/or on the tv programs. Some experiment the sexual assault mechanically. According to Louville and Salmona (2013), dissociative strategies such as being mentally disconnected from the event and adopting automatic behaviors allow subjects to calm the emotional distress caused by the traumatic event. These strategies therefore seem to correspond to an avoidance coping which, according to Bruchon-Schweitzer (1990), is effectively exploited when the event is perceived as inevitable.

All also use behavioral bypass strategies as defined by De Puy *et al.* (2002): e.g. hiding a knife under their pillow as a means of threat, avoiding the marital bed, falling asleep before their partner comes to bed, triggering quarrels, encouraging their companion to consume alcohol, returning late from visiting their loved ones, neglecting their physical appearance or ensuring never be alone with their partner. Nevertheless, these subterfuges are not always effective on the long term and do not allow them to escape from repeated assaults. In order to find a final solution to the rapes, two women sought for the help of a professional stakeholder and one ask their

relative to speak with her spouse to make him think about their actions. Again, these attempts to resolve rarely yield any satisfying results.

The separation then constitutes the last resort for all our subjects. Nevertheless, according to De Puy *et al.* (2002), couple's separation is not always easy to set up because it requires a great mental and material preparation. Furthermore, according to Kabile (2012), romantic attachment is also an obstacle to separation because it potentially encourages victims to ignore violence.

What are the strategies implemented by the victims to cope with the symptoms of rape?

Two subjects first implemented disengagement strategies and didn't immediately consulted a professional because they were convinced that the rapes had no deep impact on them. It is the resurgence, or the anchoring, of symptoms that finally led these women to consult. The first consulted stakeholder is not necessarily a mental health professional. Indeed, it may be, for example, a specialist in the legal field (in order for the victim to ensure her own safety and the protection of her children, or to fill a complaint). One of our subject first consulted her physician to soothe her physical symptoms. However, the women in our sample were later referred to a psychiatrist, psychoanalyst or psychologist. Nevertheless, most of the participants discontinued these follow-ups because of the cost of the sessions and/or the improper attitude of the professional, which is in line with the remarks of Littleton and Radecki Breitkopf (2006) as well as those of Taft, Resick, Scott, Vogt and Mechannic (2007). Three women decided to consult a psychologist to continue later their reconstruction work. The others put an end to their psychological follow-up because they considered that the evocation of their past did not solve their suffering, even amplified it. Caret (2011) confirms that these two attitudes are possible in the face of a traumatic event.

Conclusion

Our results show that, when they have to face sexual assaults from a violent spouse, the victims use various verbal and /or physical tactics to resist their abuser. However, the more important the author's determination is, the less effective the victims' strategies of resistance are. Sometimes, the women have no choice but to suffer these abusive and non-consensual relations which coerce them into setting mental process in order to stand this dehumanizing act. Partner rapes generate significant trauma, especially in the field of sexuality. Most of our subjects react with more or less intense sexual inhibition. Others engage in sexual practices that provoke emotional anesthesia (sadomasochism, multiple sexual relations, etc.) in order to maintain an active sex life. After the separation, the victims prefer to implement strategies of disengagement (minimization, denial, ...) allowing them to avoid the resurgence of painful affects related to the past abuses. However, the use of such defense mechanisms obstructs the access to mental care and therefore to the elements of a potentially life-saving resilience.

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Perceived Parental Control and Risk-Taking from a Machine Learning Approach

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Abstract
The purpose of the current study was to examine the relationship of parental control and risk-taking among emerging adults. Specifically, the study examined the differences between high risk-taking and normal college students in parental control, risk-taking, and risky decision-making. Data were drawn from 538 college students by using an online survey. The measurements included demographic questions, parental control, risk tolerance, risk self-schema, and risk-taking. Two unsupervised learning methods, including data cloud geometry tree (DCG-tree) and agglomerative hierarchical clustering tree (HC-tree), were used to get clusters of participants based on the pattern of their responses on risky decision-making. Next, post hoc tests were conducted to examine the differences between the potential high risk-taking group and normal group. Among the participants, 22 students showed a special pattern in their responses and clustered into a group as potential high risk-takers. Compared to the normal group, the potential high risk-takers were more likely to engage in risk-taking behaviors (e.g., risky driving, smoking) and reported lower parental behavioral control and higher psychological control. In addition, the Wilcoxon rank-sum tests indicated that the high risk-takers could tolerate more risks and were more likely to have a self-schema of being a risk-taker in the decision-making process. The study suggests that parental control plays an important role in risk-taking among emerging adults. In addition, using machine learning approach can help identify the potential high risk-takers, who show distinctive characteristics that are different from the normal emerging adults and can be included as target in future intervention programs.

Keywords: parental control, risk-taking, machine learning

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Introduction

Risk-taking refers to behaviors that are associated with a chance of undesirable results (Boyer, 2006). Youth are typically perceived as risk takers because they often exercise poor decision-making that favors short-term gains (Spear, 2002; Steinberg, 2004). Numerous studies have provided evidence that parental control plays an important role in youth's risk-taking; however, there are limitations in the literature. First, the majority of studies have examined behavioral control, and only few attempts have been made to explore how psychological control influences risk-taking. Second, most of the research on parental control has been conducted with children and adolescents, but the study among emerging adults is also necessary as recent research has indicated that parents continue to exert control over their college-aged children. Thus, the purpose of the current study was to examine the relationship of parental control and risk-taking among emerging adults by using the machine learning approach. The study further examined the differences between high risk-taking and normal emerging adults in parental control, risk-taking, and risky decision-making.

Parental Control

Barber, Olsen, and Shagle (1994) clarified that there are two forms of parental control with conceptual distinctions. *Behavioral control* refers to regulation of behavior and activities without negating youth's own thoughts or ideas. *Psychological control*, on the other hand, is defined as parents' attempts to shape children's behaviors via tactics such as constraining verbal expressions, invalidating feelings, personal attack, and love withdrawal.

Parental behavioral control and psychological control have been linked to a variety of youth's developmental outcomes. Generally, parental use of behavioral control can promote positive behavioral outcomes in children (e.g., Barber, 1996; Fletcher, Steinberg, & Sellers, 1999; Kincaid, Jones, Cuellar, & Gonzalez, 2011) because parents who use behavioral control provide rules and restrictions, which monitors and regulates children's behavioral worlds. For example, several studies have found that parental behavioral control has protective effects on children's externalizing problems, such as drug use (Martins, Storr, Alexandre, & Chilcoat, 2008), cigarette smoking (Guo, Reeder, McGee, & Darling, 2011), and alcohol use (Arria et al., 2008). Children have been consistently found to be more likely to have positive behavioral outcomes if they perceive a high level of behavioral control from their parents.

In contrast, parental psychological control is associated with children's negative outcomes, such as internalizing problems (e.g., Barber, 1996; Kincaid et al., 2011) because parents who utilize psychological control may manipulate children's thoughts and feelings, which then inhibits children's development of autonomy and independence. For instance, empirical evidence has shown that parental psychological control is linked to depressive symptoms (Loukas, 2009) and low self-esteem (Bean & Northrup, 2009). However, in terms of risk-taking behavior, the relation is unclear given that the link between psychological control and risk-taking has mixed results in the literature. Therefore, the current study aimed to examine the relationship of the two forms of parental control and risk-taking in order to better understand how parental control may influence youth's risk-taking.

Risky Decision-Making

Decision-making refers to cognitive process of making choices among competing courses of actions (Raiffa, 1968). When making a decision regarding risk-taking, one considers potential gains and losses in the decision-making process, such as perceived vulnerability (Urberg & Robbins, 1984) and risk perception (Beyth-Marom, Austin, Fischhoff, Palmgren, & Jacobs-Quadrel, 1993). To examine the characteristics of risk-taking among youth, the present study focused on two domains of risky decision-making: risk tolerance and risk self-schema.

Risk tolerance is defined as the maximum amount of risk that someone is willing to accept (Grable, 2000). It depends on the evaluation of the risk, such as the threat of loss or the opportunity for gain (Lopes, 1987). Research on risk tolerance has found that when individuals are in the pursuit of some goals, they may be more willing to accept the risks in order to achieve their goals, and their willingness to accept risk is positively correlated with their actual behavior (Corter & Chen, 2006).

Risk self-schema refers to cognitive generalizations about the self as someone who takes risks. When risk self-schema is activated, the beliefs about the self as a risk taker are activated and will facilitate performance of risk-taking behavior. Research has suggested that self-concept plays an important role in one's engagement in health-related behavior (Freeman, Hennessy, & Marzullo, 2001). When individuals consider themselves risk-takers, the projected behaviors, such as drug use and smoking, may be reinforced and rationalized. In this manner, we focused on risk tolerance and risk self-schema in the decision-making process to examine risk-taking.

Machine Learning Approach

The present study aimed to identify the high risk-taking emerging adults and compare them with the normal group regarding their perceived parental control, decision-making, and risk-taking. To identify these emerging adults from the sample, the machine learning approach was applied. Computational social science has been discussed extensively recently, and using machine learning techniques helps researchers to look at data from a different perspective. Machine learning is a data-driven approach by using statistical techniques and algorithms to explore a dataset and discover the hidden information. By quantifying the association of the observations, we can find the structure of a dataset. Unsupervised learning is a technique in machine learning that groups observations by their association so that observations in the same cluster are more similar than those in other clusters. With clustering results, researchers can explore the clusters and understand the characteristic of each cluster.

In this study, two unsupervised learning methods were performed to group the emerging adults based on their risk tolerance. The two tree-based clustering methods, including data cloud geometry tree (DCG-tree; Fushing, Wang, VanderWaal, McCowan, & Koehl, 2013) and agglomerative hierarchical clustering tree (HC-tree), were compared to make sure the stability of clustering results. The cluster that contained special behavior patterns would be considered potential high risk-taking group.

The Current Study

The purpose of the present study was to examine the relationship of parental control and risk-taking among emerging adults. Specifically, we used unsupervised learning method to identify the high risk-taking college students, and compared them with normal emerging adults in perceived parental control, risky decision-making, and risk-taking.

Given that parental behavioral control is considered positive whereas psychological control is considered negative in terms of their influences on children's behavioral outcomes, we hypothesized that high risk-taking emerging adults would perceive a lower level of behavioral control and a higher level of psychological control, compared to the normal emerging adults. In addition, high risk-taking group was predicted to tolerate more risks, be more likely to perceive themselves as risk-takers (i.e., risk self-schema), and engage in risk-taking more frequently, compared to the normal group.

Methods

Participants

A total of 538 (176 males, 362 females) college students in the U.S. ($N = 382$; age $M = 18.53$, $SD = .53$) and Taiwan ($N = 156$; age $M = 18.94$, $SD = .62$) participated in an online survey. Participants in the U.S. were ethnically diverse (42.9% Asian American, 33.5% Hispanic, 12.8% Caucasian, 3.9% Black or African American, 2.6% Middle Eastern, and 4.3% Other/Mixed), while participants in Taiwan were all of Taiwanese descent. The U.S. students fulfilled a course requirement by participating in the study, whereas the Taiwanese students received a gift card as compensation for participation. The study was reviewed and approved by the university's Institutional Review Board.

Measures

Psychological Control. Psychological control was assessed by the 10-item Psychological Control Scale (Barber, 1996), the 8-item Psychological Control-Disrespect Scale (Barber, Xia, Olsen, McNeely, & Bose, 2012), and one item for shame (Chou & Chou, in press), including the following sub-domains: constraining verbal expression, invalidating feeling, personal attack, love withdrawal, guilt induction, disrespect, and shame. Participants were asked to rate how well the items described their mother and father (or non-biological parents) separately (0 = *not like her/him* to 3 = *a lot like her/him*), such as "My Mother is a person who brings up my past mistakes when she criticizes me". Higher scores indicated greater perceived levels of psychological control. The Cronbach's alphas were .906 for maternal control and .921 for paternal control.

Behavioral Control. Behavioral control was measured by the 9-item Behavioral Control Scale (Barber et al., 1994). Participants rated on a 3-point scale how well the items described their parents (1 = *not like her/him* to 3 = *a lot like her/him*). Sample item is "My mother lets me do anything I like to do." The Cronbach's alphas were .694 and .753 for maternal control and paternal control, respectively.

Risk Tolerance. An 8-item Risk Tolerance Scale was used to assess the amount of risk in percentage that one is willing to accept given different situations. Different situations include situations concerning self (e.g., getting injured or hurt, and losing one's money) and situations concerning others (e.g., hurting other people, and disappointing one's family). Participants were instructed to answer the questions on a scale from 0% to 100% chance of risk, where 0% indicated no tolerance of risk and 100% indicated the maximum tolerance of risk. The scale indicated good reliability (Cronbach's alpha = .841).

Risk Self-Schema. The 8-item Risk Self-Schema measure developed by the author and colleagues was used to assess the degree that one views the self as a risk-taker. Participants rated on a 5-point scale (0 = *Not me at all* to 4 = *That's me!*) how much they view themselves as a risk-taker in terms of specific risk activities, such as risky driving and binge drinking. Cronbach's alpha coefficient of internal consistency was .739.

Risk-Taking Behavior. The revised Risk Involvement and Perception Scale (Parsons, Siegel, & Cousins, 1997) was used to assess participants' self-reported risk-taking behaviors. Participants were asked to choose a number that corresponded to their involvement in each of the 18 behaviors during the past 3 months. The 18 behaviors constitute a representative set of risk-taking behaviors, such as riding with a drunk driver, using marijuana, and having sex without a condom. Participants rated on a 9-point scale, from 1 = *never* to 9 = *daily*. For the interest of the current study, only items for risky driving, binge drinking, marijuana use, smoking, and unprotected sex were used. The Cronbach's alpha for these selected items was .626.

Data Analytic Strategy

To identify the potential high risk-takers, the study applied the machine learning techniques. Two unsupervised learning methods, including DCG-tree and HC-tree, were used to get clusters of participants based on the pattern of their responses on risk tolerance. The heatmaps were constructed to show the mean response patterns of each group. Next, the Wilcoxon rank-sum tests were conducted to examine the differences between the potential high risk-taking group and normal group. The data analytic process can be found in Figure 1.
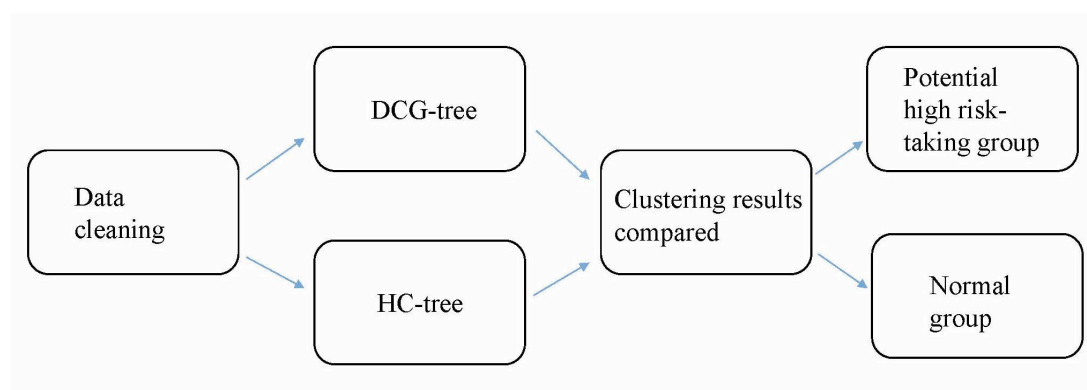
Figure 1: Flow chart of data analytic process.

Results

Among the participants, 22 students showed a special pattern in both DCG-tree and HC-tree and clustered into a group as potential high risk-takers. The responses of behavioral control and each psychological control component for the two groups are shown in Figures 2 and 3, respectively. Risk tolerance and risk self-schema are shown in Figures 4 and 5, respectively.
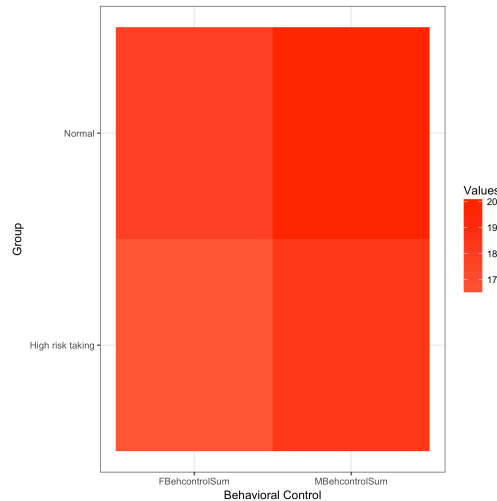
Figure 2: Comparison of high risk-taking group and normal group on behavioral control.
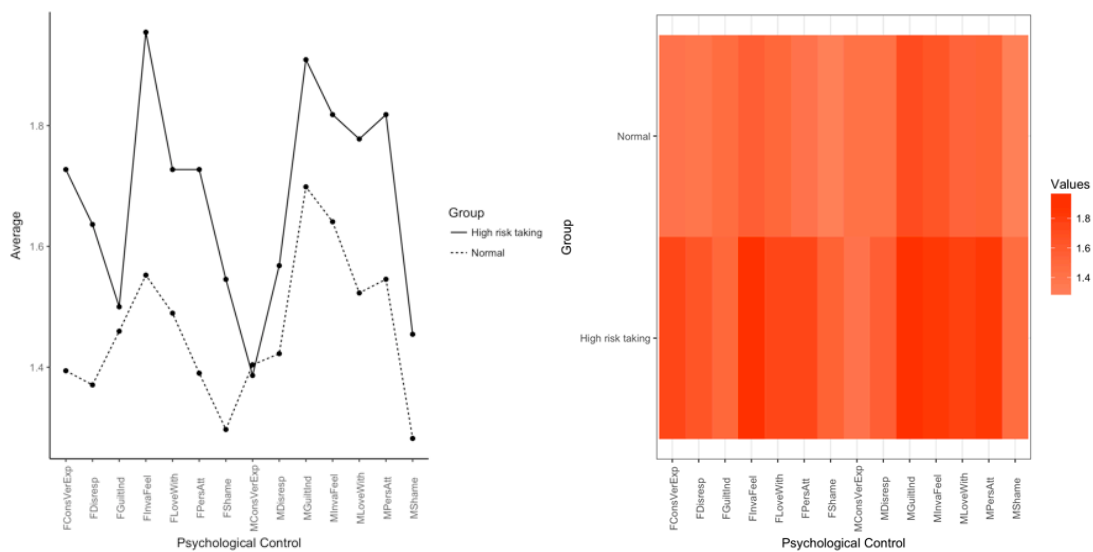
Figure 3: Comparison of high risk-taking group and normal group on psychological control.
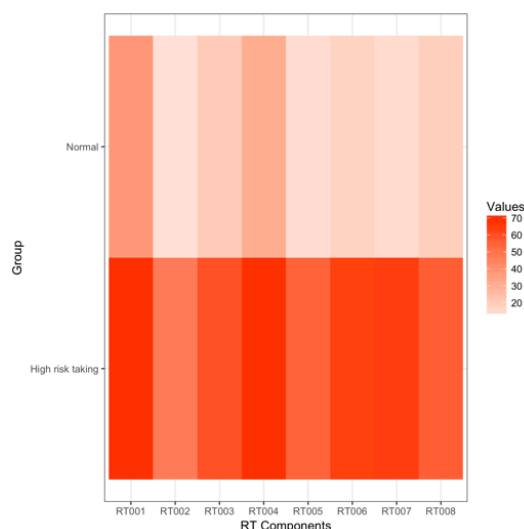
Figure 4: Comparison of high risk-taking group and normal group on risk tolerance.
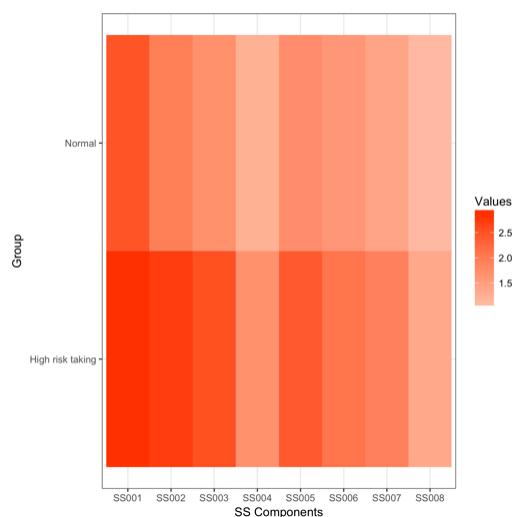
Figure 5: Comparison of high risk-taking group and normal group on risk self-schema.

Next, Wilcoxon rank-sum tests were performed to compare the difference of distributions of the two unbalanced groups. The normal emerging adults perceived a higher level of maternal behavioral control ($W = 3898.5$, $p = 0.015$) and paternal behavioral control ($W = 4050.5$, $p = 0.098$) than the high risk-taking emerging adults. In terms of parental psychological control, generally, the high risk-taking group perceived a higher level of psychological control than the normal group. The two groups were significantly different in maternal personal attack ($W = 7209$, $p = 0.023$), maternal love withdrawal ($W = 6794.5$, $p = 0.039$), maternal disrespect ($W = 7004.5$, $p = 0.048$), paternal invaliding feeling ($W = 6906$, $p = 0.017$), paternal personal attack ($W = 6838$, $p = 0.026$), paternal disrespect ($W = 7181$, $p = 0.010$), and paternal shaming ($W = 6625$, $p = 0.020$).

Moreover, the two groups showed significant differences in the risk tolerance items (all p values < 0.0001) and general risk self-schema ($W = 8355$, $p < 0.001$), suggesting that high risk-takers could tolerate more risks and were more likely to have a self-schema of being a risk-taker in the decision-making process, compared to their counterparts. In addition, compared to the normal group, the potential high risk-taking group was more likely to engage in risk-taking behaviors ($W = 7083$, $p = 0.019$).

Discussion

The current study aimed to examine the relationship of parental control and risk-taking among emerging adults. In order to identify the high risk-taking emerging adults and compared them with the normal emerging adults, we used machine learning techniques, including DCG-tree and HC-tree, to get clusters of participants based on their risk tolerance. Several important findings emerged and supported the hypotheses.

First, the high risk-taking group perceived a lower level of parental behavioral control than the normal group. The results are consistent with the literature, such that behavioral control is perceived as positive that promotes children's better behavioral outcomes (Fletcher et al., 1999; Kincaid et al., 2011). Our results indicated that parental use of behavioral control has protective effects on college students' risk-taking; parents monitor and regulate their children's activities and behaviors, which leads to children engaging in risk-taking behaviors less frequently.

On the other hand, the results showed that the high risk-taking emerging adults perceived a higher level of parental psychological control than the normal group, which is in line with the prior findings that psychological control is regarded as negative that intrudes on children's psychological worlds (Barber, 1996; Kincaid et al., 2011). It is possible that the perception of psychological control from parents makes college students feel a threat to their senses of autonomy, which may result in rebelliousness and risk-taking behavior during the transition into emerging adulthood. Therefore, our findings suggested that parental use of psychological control may be negative and increase college students' likelihood of risk-taking.

Next, the high risk-taking group was found to tolerate more risks, compared to the normal group. That is, the high risk-taking participants were more likely than their counterparts to tolerate the risks of getting hurt, hurting other people, losing money, and disappointing family if they really wanted to do something. Consistent with the prior studies, our results indicated that when high risk-taking individuals were in the pursuit of some goals, they were more willing to accept the risks, and were more likely to engage in risk-taking behaviors. In terms of risk self-schema, high risk-taking emerging adults were more likely to perceive themselves as risk-takers than the normal emerging adults. These individuals held the beliefs about the self as someone who takes risks. Their beliefs can shape and rationalize their behaviors, and contribute to their engagement in risk-taking behaviors (Freeman et al., 2001). Consequently, it is important to look at the cognitive process when examining risk-taking in emerging adulthood.

It is noteworthy that the current research examined both maternal and paternal control. Inclusion of fathers in parenting studies is necessary but lacking in the literature. Our results showed that the high risk-taking group perceived high levels of both maternal and paternal psychological control and low levels of both maternal and paternal behavioral control. The similar findings of mothers and fathers indicated that both parents are important social agents in shaping children's behavior. Additionally, the present study suggested that parental control has an influence on not only children and adolescents but also emerging adults. Parents continue to exert control after their

children get into college, and may further influence their children's risk-taking behaviors.

Moreover, the present study suggested that using the machine learning approach can help identify the potential high risk-takers. There are plenty of unsupervised learning methods in the machine learning field, and the current study used two tree-based clustering methods (i.e., DCG-tree and HC-tree) to get clusters of the participants. Using tree-based clustering methods helps visualize how the paired observations merge into clusters, which makes it easier to identify the relationship of the observations graphically. Although there is not a standard way to quantify the performance of the clustering results, the present study indicated that using the tree-based clustering methods can identify the potential high risk-takers among emerging adults and may be helpful in future intervention.

Limitations and Future Directions

The present study had a few limitations. First, we used self-reports from college students. Future research could include parents' reports of parental control from both mother and father to avoid bias. Second, we used cross-sectional design in our study. A longitudinal design in the future will help to capture the changes in parental control and its associations with behavioral outcomes from adolescence to emerging adulthood.

Although more research is needed, future intervention programs may be targeted to the potential high risk-takers, involve not only students but also their parents in the programs, and focus on parent-child relationship. Also, the programs can provide practices in decision-making skills to help emerging adults to build their decision-making competencies (McCoy, Chou, & Guerra, 2016). The broader impact of the current study is to prevent college students from engaging in risk-taking behaviors and to promote their positive development.

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A Qualitative Study on the Need of Peer Group Supervision for Psychologists Working in the University

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Abstract

When psychologists facing crisis cases, they will look for individual supervisions. Sometimes, the institutions also provide group supervisions. However, the quality and the quantity of these supervisions are far more below their practical needs and cause some following problems: Stagnation of self-development, Insufficient professional growth, Unable to handle crisis cases, and Financial problems. In order to understand the need of peer group supervision for psychologists working in the university in Taiwan. The researcher using semi-structured technique to interview six counseling and clinical psychologists working in university counseling centers. This research is divided into three dimensions: Case intervention, Professional development, and Self-growth. The major findings are as follows: Firstly, the diversity of the professional backgrounds broaden the thinking point of views, and the years of experiences did help the younger colleagues to handle administrative communication. However, the personal traits might be the barrier that need to take care of. Secondly, some psychologists want to learn some latest theories and techniques though these peer study groups, but the others just want to do some case studies to make sure that they didn't do anything wrong in the counseling room. Thirdly, although some psychologists are unwilling to share personal issues in these groups, all of them are willing to make time for the groups, no matter how busy they are. Finally, the researcher also provides some useful suggestions about how to take care of the psychological need of these psychologists for the better efficiency in clinical practices in the end.

Keywords: peer group supervision, case intervention, professional development, self-growth

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Introduction

In a systematic psychologists training program, it is very important and indispensable to have a professional supervision system. When most of the psychologists looking for supervisor, the first thing that comes to their mind is individual supervision. However, professional supervision does not limit in professional supervision. Group supervision and live supervision are widely used in some countries. Besides, there are some benefit to having supervisions, on one hand, psychologists being supervised can not only help them provide most appropriate services to their clients but also help psychologists themselves to have personal and professional growth (Lin, 2008). Moreover, when crisis cases happened in the university, they have to take high pressure and multiple responsibility to deal with the cases. Under this situation, they not only have to take care of the clients' emotions and having crisis evaluation, but also have to cooperate with the relevant staffs and correspond with clients' parents in need. If they can handle these cases well, it is the time that their professional knowledge can be seen (Chen, Wang, & Liao, 2012). In short, group supervision not only provide administrative and educational function that give knowledge and experience to improve working ability but also provide supportive function (Wang, Li, Xie, & Peng, 2003).

When psychologists facing crisis cases, they will look for individual supervisions, sometimes, the institutions will also provide group supervision sessions for them. However, the quality and quantity of these supervision sessions are far more below their practical needs and cause some following problems. (1) Stagnation of self-development: Most of the psychologists are very concerned about their own growth and believe that self-growth requires a lifetime learning. However, when entering working environment, it is often too busy to take care of themselves. (2) Insufficient professional growth: The Ministry of Education subsidizes the universities to handle many professional courses, such as seminars, workshops and so on. However, most of these opportunities are short-term on-the-job training, resulting in insufficient professional growth. If psychologists can participate in the peer group supervision regularly, it will be able to improve the current situation. (3) Unable to handle crisis cases: Many state universities are willing to provide funding for counseling centers to seek external supervisors when facing crisis cases. However, the frequency is still far below the actual needs and most of these supervision is focus on crisis cases but not individual growth. As for some private universities, owing to the shortage of funds, it's more unlikely to provide external supervisors, which results in poor professional service quality. (4) Financial problems: Although there are many organizations that hold various seminars and workshops, the cost is still too high for novice psychologists just graduated from the school. Even if they are interested in these seminars and workshops, they are often deterred in the end.

Literature Review

Differences between peer group supervision and group supervision

Peer group supervision is a kind of group supervision and it has two, three and group modes, but group supervision mostly refers to a combination of three or more (Shyu and Huang, 2007). Besides, group supervision is a relationship that is intensively focused on interpersonal interaction (Loganbill, Hardy, & Delwoeth, 1982). The main

difference between the two is that peer group supervision means that there are no external professional supervisors in the process of group supervision, but the leaders are rotated by their peers. Therefore, there is no fixed supervisor role, and there is no hierarchy in the group. When discussing the need for supervision, there are two questions that psychologists may have to face: (1) how to learn from the supervision to keep up with the trend of the times; (2) how to learn from the supervision to improve their own counseling skills (Runkel & Hackney, 1982). A good professional supervisor should include both questions above, because continuous learning and challenge are the core of the professional training in counseling and psychotherapy (Grant & Schofield, 2007).

In general, peer group supervision confirms the learning topics for the first time, and the supervisor's job is to establish a supportive growth environment and help the members to create open and honest environment. A study by Baggerly and Osborn (2006) found that peer group supervision can improve the job satisfaction of psychologists, but few institutions use a structured approach to support each other and use peer group supervision. Xie, Weng, and Zhang (2007) found that the research of individual counseling and supervision was more than the research of group counseling, and the researchers collected relevant literature and found that the research of group counseling was more than that of peer group. Huang, Lin, and Zhang (2010) believe that the need for supervision is usually in the course internship. When a student leaves school, even if he is still a novice psychologist, he still rarely seeks supervision at his own expense. Instead, he will seek the assistance of the agency's supervisor. However, the functions and efficiencies are unlikely to be compared with formal professional supervision. Under the consideration of economy, time and costs, peer group supervision becomes a feasible approach (Ray & Altekruse, 2000).

The leader of the supervisory group is the observer or moderator of the group process, but the leader with the teacher status is easily regarded as a knowledge expert. Therefore, one of the best methods of counselor practice training is to put it in group supervision. Discussions with peer groups can often stimulate members to think more about the differences in their work ideas and get immediate help. Such peer group supervision can be carried out to achieve immediate support (Bailey, Bell, Kalle & Pawar, 2014).

Peer group supervision process

Peer group supervision is a process in which psychologists use mutual relationships and expertise to help solve problems that affect individual learning and work. Mastroleo, Turrisi, Carney, Ray, and Larimer (2010) argue that the use of non-standardized peer group supervision or training, as well as the use of less experienced peers as providers of supervisory learning resources, may have unexpected effects on each other's trust relationships and the effectiveness of interventions. Besides, Lattanzi, Campbell, Dole, and Palombaro (2011) also argue that peer learning requires several essential elements: trust between observers and observers, clear assessment projects, and mutual observation and feedback to promote learning experiences. Moreover, Zhang (2015) mentioned that we should be aware that not letting peer group supervision become an emotional support group and a complaint-type group, and reduce the effectiveness of peer group supervision. Although professional supervision has many benefits for psychologists, but studies found that

psychologists working in the universities rarely use peer supervision or group supervision to help professional growth (Wang, Shyu, & Lian, 2006).

Novice and senior psychologists have different needs when seeking peer supervision. Novice psychologist refers to the chartered psychologists who are actually engaged in counseling work for less than three years. For novice psychologists, their demand for supervision is significantly higher than that of senior psychologists (Shyu, 2005). However, their economic status is mostly lower than that of senior psychologists. Under this circumstance, if the colleagues can provide similar opportunities for supervision, such as crisis case intervention, the opportunities for professional growth and the space for self-growth, most of the novice psychologists are willing to participate in the peer group supervision. Senior psychologist refers to the chartered psychologists who have actually engaged in counseling work for more than 3 years. For this group of senior psychologists, the frequency they seek for individual supervision is much lower than that of novice psychologists (Shyu, 2005). However, this does not mean that they do not need any support, assistance or advice. If there is an opportunity for peer group supervision, it can provide learning, growth and communication from different experiences and professional growth. Researcher believe that these senior psychologists are willing to provide their experience in the group to discuss with their colleagues and learn from each other. Especially when crisis case happened, although individual supervision after the crisis intervention can provide effective assistance for the psychologists, immediate peer supervision provide more effective crisis intervention plans and emotional support in time (Mai & Cai, 2004).

Research method

Design & Participants

The researcher using semi-structured technique to interview six counseling and clinical psychologists working in university counseling centers. The background of selected research participants are shown in Table 1.

Table 1
Background of selected research participants

Participants	Gender	Education	Work Place	Years of Experiences	CERTIFICATE
A	Female	M. in Counseling Psy.	National U.	5	Counseling Psy.
B	Female	M. in Apply Psy.	Private U.	10	Counseling Psy.
C	Male	M. in Counseling and Clinical Psy.	Private U.	6	Counseling Psy.
D	Female	M. in Behavior Psy.	National U.	14	Clinical Psy.
E	Female	M. in Counseling Psy.	National U.	8	Counseling Psy.
F	Female	M. in Counseling and Rehabilitation psy.	Private U.	5	Counseling Psy.

Research tool

In qualitative research, the researcher himself is the tool, therefore, the researcher's skill and ability will affect the validity of the research (Wu & Li, 1995). In this study, the researcher uses the open-question techniques to interview six participants with the following question. (1) If the institution set up a system of peer group supervision, what's the merit, deficits, and limitations of Case Intervention, Professional Growth, and Self-Development? (2) What are the forms and contents of the peer supervision group in your university? (3) Will you look for individual supervision on your own expense? (4) Have you ever received supervision training? How does it help you? (5) What kinds of ability do the psychologists need to work effectively?

Results and Discussions

The research is divided into following three dimensions, shown as table 2.

Table 2
Research dimensions and discussed topics

	CASE INTERVENTION	PROFESIONAL DEVELOPMENT	SELF-GROWTH
1.	Professional background	Research ability	Self-identification
2.	Counseling intervention	Professional growth ability	Peer support
3.	Experience differences	Counseling supervision ability	Self-management
4.	Personality traits		

Case Intervention

When having peer group supervision, psychologists not only sharing their counseling intervention experiences, but also talk about cultural differences, administrative considerations, clients' family relationships, crisis invention and so on. In this research, it is divided into the following four topics: Professional background, Counseling intervention, Experience differences, and Personality traits

1. Professional background
It means that psychologists should have considerable differences in theoretical schools, philosophical views, and human nature based on their individual professional training background. From the perspective of psychoanalysis, client center, and even the postmodern school, the feminist point of view, and the context of multiculturalism, we can provide a theoretical perspective on the diversity of group members.

 (1) Different perspectives has its own advantages and disadvantages
The advantage is that you can hear different opinions, peers' background orientation, professional context or philosophical views. When you present a case for discussion, and then you can help with the peers, you can get a multi-faceted view. Integrity and

comprehensiveness. However, owing that everyone has his viewpoints, it is possible to bring out some restrictions because of this advantage.

> *When everyone reads things in different angle, sometimes I might be affected and start to doubt myself that am I doing the right thing (A02-02)?*
> *I think I can hear more different voices (B26-01).*

(2) Provide different views from the perspective of psychopathology

When psychologists discuss crisis cases, cases often have symptoms of mental illness. Compared with counseling psychologists, clinical psychologists or psychiatrists will provide assessments and recommendations from the perspective of psychopathology.

> *I was working in the psychiatric department, after that, I still had an experience working in the social welfare agency and hospital, so I would be able to cut-in from the perspective of psychopathology (E09-01).*

2. Counseling intervention

Psychologists provide reference guidelines for group members to learn based on their experience in dealing with similar cases, intervention skills, the consequences, the issues needing attention, and the possible impacts.

(1) Provide advice on short-term or long-term crisis cases

When a campus crisis occurs, it is very important to be able to cut in from different aspects and conduct a holistic assessment. If a peer group supervision system can be established, the psychologists will have a better understanding of each other's case profiles. In times of crisis that require urgent treatment, there will be more effective responses.

> *As special cases focus on the point of crisis, we will not look at the complete picture of the case. Everyone will still discuss it but not see it in depth (D10-01).*

(2) Provide advice on administrative considerations

When handling crisis case in the university, it takes a lot of communicate with different administrative department. Psychologist can discuss what difficulties he may have in dealing with the case or how to deal with it.

> *Novice psychologists try very hard to maintain the counseling relationship, but when working for a long time, I personally think that we need to find out the balance point between the administration, school-reputation, family, and the clients (E04-01).*

3. Experience differences

Psychologists provide many types of cases according to their working years. The matters that need to be paid attention to during the intervention, and the possible impacts. It usually cover with systematic suggestions.

(1) Rich years of experience can provide better suggestions

If the peer group supervision can be organized effectively, it can help each other in the integration and application of theory and practice. However, if the relationship is not good enough, it may not work well due to anxiety and disapproval. In addition, the same recommendations have different effects on senior psychologists and novice psychologists.

> *It depends on the psychologist's experience, I think it is not bad for an experienced psychologist to share his own structure and experiences. (D25-01).*

(2) Different years of experience has different stages of need

Novice psychologists and senior psychologists have different needs for peer group supervision. The assistance that a novice psychologist needs may be operational skills. However, the assistance that senior psychologists need may be more inclined to hear different perspectives.

> *When working for a long time, it will be more like working with intuition. There will be so-called myths and fixations. When listening to different opinions, you can learn some ideas or find something you have forgotten before. Because there is no such thing within "intuition" (E01-03).*

4. Personality traits

Psychologists provide different supporting dimensions in the case intervention according to their personal traits.

(1) Presenting needs of peer supervision and doubting their own counseling abilities

Everyone needs to be recognized in the workplace or prove that they are capable to doing their job well. Express his need for help doesn't means that he has insufficient counseling ability.

> *I don't have confidence in some parts of myself and I worry about that somebody may find it. So when someone giving me advices, it makes me feel that I am really not good enough (A32-01).*

(2) Relax discuss cases with colleagues without fear of criticism

Peer group supervision requires an atmosphere of trust and an uncritical attitude to be able to help each other grow in the process. In the interview, psychologists also revealed their uncomfortable feelings and internal concerns.

> *It's an uncomfortable feeling if I have done something bad. Then, I double check with other people, just to make sure that I really done something wrong. The mood is very bad (C10-01).*

Professional Growth

It means that we can get further professional learning from each other. In this research, it is divided into the following three topics: Research ability, Professional growth ability, and Counseling supervision ability.

1. Research ability

Psychologists exchange and interact with each other in the field of study according to their differences in research fields, in addition to deepening their professional competence, and accumulating their ability to study.

(1) Psychological assessment and research methods
The researcher found that psychologists seemed to be less interested in this part and worried about their lack of ability.

> *I think I am still adept at some aspects at this stage, for me, I need to be very skillful to know how to do assessment and analysis (A09-01).*

(2) Read the counseling literature and submit to a seminar or journal
Psychologists seem to have less willingness to submit papers to the journals via peer group supervision, but they are willing to share the experience of study to enhance professional knowledge.

> *If you have a colleague in common, it may make you feel that you can always have some connection with him and exchange knowledge (B19-03).*

2. Professional growth ability

Psychologists learn from each other's theoretical expertise based on their theoretical expertise to expand their multi-faceted and theoretical application skills.
(1) Live role-play and practical exercises
When entering the workplace, it is often impossible to report cases in this way. On one hand, psychologists feel that they will spend more efforts, on the other hand, it will also cause greater pressure on the psychologists. However, some psychologists said that it may be possible for psychologists to choose practical exercises in order to avoid the troubles caused by written reports.

> *I think it is possible, but its burden is also quite large. It feels like you have to report when you are in class doing a 50-minute practice. If you seriously invest in peer group supervision, there will be more effort to supervise the practice (F46-01).*

(2) Case study of recording video
Regarding whether psychologists are willing or not, the interviewed psychologists raised four major concerns: First, the cases usually disagreed, especially in crisis cases requiring case studies. Second, the psychologist disagrees because it creates higher anxiety. Third, the purpose of audio and video recording seems to be for the psychologist's study, which will affect the trust of the case. Fourth, although some cases agree to recording, in order to have good performance, the counseling process is often made very unreal.

> *The difficulty in recording video lies in the cases, because they are usually unwilling. Moreover, cases that need to be discussed are often hard to deal with (C37-01).*

3.Counseling supervision ability

Refers to whether psychologists have received relevant training in counseling supervision, or applied the theory and skills of counseling supervision to assist the interns.

(1) Insufficient supervision knowledge and affect self-confidence
Although peer group supervision is based on an equality of mutual trust and mutual learning, rather than emphasizing the entire discussion led by an external professional supervisor. However, some psychologists still feel that they have not received professional supervision training and feel that they have insufficient ability.

> *If I were the supervisor today, I will seriously prepare the report, so the process gives me a chance to jump out and see how I am doing to that process (C02-05).*

(2) Seniors are more likely to be supervisors and affect the willingness to share
Some senior psychologists interviewed said that they have invisible pressures and responsibilities and expected to make effective suggestions.

> *I feel that sometimes I was shaped to lead my colleagues (B94-01).*
> *We have colleague working for fourteen years, I think we can learn different things and aspects from seniority (E11-01).*

Self-Growth

In this part, it is returning to the psychologist himself, focusing on the inner self-sublimation level, such as paying attention to spiritual growth and elevating to another inner level. In this research, it is divided into the following three topics: Self-identification, Peer support, and Self-management.

1. Self-identification
Even in difficult cases, resisting cases, or failed cases, psychologists still believe that they are capable, and they will not be easily knocked down or change their faith to help others.

(1) Learn from differences and enhance self-awareness
The purpose of peer group supervision is not just how to give the best assistance to the case. Sometimes, the focus is on the psychologist himself, so that the peers can see each other's efforts.

> *Behind the recognition, I actually did my best, not because I didn't try hard to do it but I wanted to be seen (A21-01).*

(2) Open discussion of personal issues without worrying about being measured
Some of the psychologists interviewed said that they can return to self and gain growth from such a process. However, some psychologists have expressed that they are inevitably competing with their peers, they are worried about being evaluated, they hope to have a good reputation, and they are not willing to open up their own internal issues.

> *I may also wish to have a good reputation. When I having my own private clinic someday, people will know that I am a reliable psychologist (C13-02).*

2. Peer support
This part refers not only the support ability of the peers in the case, but also the ability of the counselors to open themselves in the peer group supervision, discuss the individual issues, and give each other support.

(1) Colleagues are not friends and there will still be issues of trust and safety
Peer supervision sometimes involves a lot of interpersonal and workplace politics. If they did not get along well, peer group supervision will be difficult.

> *It is difficult for me because colleagues are not necessarily friends (C11-02).*

 (2) Psychologists feel lonely while facing crisis cases, and hope to be seen and supported

It is better for the unit to have peer supervision, because the psychologists can know which cases are more serious and can support each other in the case of crisis.

> *When facing crisis, I will seek the assistance of my peers. Compared to other schools that only have one psychologist, it's really lonely (A96-01).*

3. Self-management
Psychologists are still willing to take the initiative to conduct peer group supervision on a regular basis when they are busy, usually covering the time allocation, the way they are conducted, and the content of the discussion.

(1) Rotate as moderators and take turns in case reports
Even if it is a peer group supervision, it is still necessary to arrange the host in turn. However, some of the psychologists interviewed said that they have evolved into a state that they do not need to have a specific moderator and peer group supervision can proceed smoothly.

> *We hold the meeting once a week. This is a result of a long-term evolution. Therefore, it is OK for us to have no leader in the group. It has become an organizational culture (D44-01).*

 (2) Perform in a relaxed environment outside school to create a relaxing atmosphere
In order to create an atmosphere that is easy to discuss, some psychologists feel that peer group supervision can be carried out on off-campus occasions. However, some psychologists said that if the peer group supervision meeting is outside the school or in the evening, it may not be easy to handle.

> *The place can be in the cafeteria, but I know this is impossible because of the need for privacy, but I am talking about the atmosphere (C30-03).*

Conclusion

Based on the research results, the research has six main findings as follows: Firstly, psychologists with different professional backgrounds can bring a variety of reflections, but they also influence the depth of case discussions because of the differences. Among psychologists interviewed in this study, some are psychoanalytic orientations, some are client center orientations, and some are postmodern orientations, most of them indicate that they can be rewarded from other psychologists during the peer group supervision process.

Secondly, when a psychologist conducts a case-study report, most of the responders are senior psychologists. In addition to the intervention of theoretical technology, they also provide a lot of administrative experience. However, the purpose of peer group supervision is not just to regard seniors as free external professional supervision, but take care of everyone's needs. The more experienced psychologists interviewed in this study indicated that because of the long-term conceptualization of their own theoretical background, their need for peer group supervision requires different perspectives. On the other hand, for a novice psychologist with the same background is required to provide a more detailed approach or improvement suggestion for the theoretical techniques.

Thirdly, although peer group supervision focuses on professional interaction on trust, equality and openness, it is still unspeakable to say that everyone has affirmative needs and critical concerns. Case-reporters worry that they are not doing well enough and affect self-confidence; novice psychologists worry that if they do not adopt the advice of seniors, they might be regard as not respect the senior colleagues. Besides, psychologists who give feedback are worried that they cannot give specific and effective suggestions. Seniors worry that they are given an invisible case-supervising role, and it seems that they are responsible for the group. All of these will affect whether the peer group supervision can be handled smoothly or not.

Fourthly, psychologists are willing to elevate their professional knowledge via study group. However, it is not appropriate to conduct literature review or journal submission through this system. In this study, the researchers attempted to understand whether psychologists working in the universities, are willing to conduct counseling researches and submit to professional journals through their knowledge. However, the psychologists interviewed said that on the one hand, they are busy on psychological prevention and the planning of the counseling research is not taken into consideration. On the other hand, most of the time in the group is used to discuss cases. However, they do not exclude the exchange of new theoretical knowledge or reading clubs.

Fifthly, it takes time to establish mutual trust to decide the way of presenting cases, such as case reports, practice exercises, or recorded video discussions. All the interviewed psychologists agree that audio and video case report is the most effective way of case discussion. However, when asked if they would like to present the case in this way, the psychologists said that there are many difficulties, such as the crisis case does not agree, the videotaping will affect the actual counseling session, the psychologists will be questioned their professional ability...etc. Besides, when asked if they are willing to conduct practical exercise, the pressure is not on the psychologist who present the case, but on the one who act as a psychologist. Moreover, if

presented in written report, some psychologists have indicated that there are too many written reports, case records, meeting materials, and event plans to do on weekdays. How to achieve consensus under the minimum pressure, the researcher believes that "trust" is the best antidote.

Finally, researcher wants to explore whether peer group supervision is likely to discuss personal issues or not. Most of the psychologists interviewed said that although there will be too many concerns about self-disclosure, there will still be thoughts in the heart that they want to try. The researcher boldly assumes that the group motivation of the peer group supervision is similar to the group motivation of the general group that require four stages, such as initial stage, transition stage, working stage, and final stage. Although researcher understand that interpersonal relationships in workplace are complex and difficult to solve, researcher still convinced that as long as we are willing to hold an open heart, accepting our own deficiencies, respecting others' openness, and sharing without giving criticism, there can be no doubted that peer group supervision will bring more professional learning and self-development to ourselves.

Suggestions

The researcher has two suggestions for the head of school institutions. Firstly, peer group supervision cannot replace individual or group supervision of external supervisors. The purpose of peer group supervision is not to replace outside supervisor and save the administrative expenses of the unit. On the contrary, we should make the best use of the background differences between peers to enhance each other's professional knowledge. The head of the school institution should not cut off the costs of the external supervisors because the psychologists propose peer group supervision program. Secondly, the university should allow psychologists to plan more relaxed peer group supervisory environment, such as half a day every two weeks. Psychologists working in the universities are not only busy with individual counseling, but also busy with crisis case prevention, suicide attempt prevention and so on. It also takes a lot of time and energy to plan these mental health promotion activities. Moreover, they still need to handle some psychological lecturer, such as emotional education, interpersonal relationships, career planning, time management, stress adjustment, etc. All these things require brainstorming between psychologists to create a variety of activities. Therefore, if the psychologists can meet in a comfortable and open corner of the university or communicate in a comfortable cafe outside the school. It should be able to stimulate more creative mental health activities, which not only enhance the participation of students, but also effectively provide a comfortable situation for colleagues.

The researcher also has two advices to unit psychologists. Firstly, peer group members are equal in status and senior psychologists do not have to take on supervisory positions. Owing that many administrator of student counseling centers are full-time professors in other fields, they often rely too much on senior colleagues in the unit to take charge of administrative duties, and even require them to supervise new psychologists. If the senior staff is authorized this job, they should immediately clarify to the supervisory role and responsibilities, and the possible negative impact on peer group supervision. Secondly, the purpose of group supervision is to create an open and interactive learning environment. Novice psychologists can try to give

senior peers generous feedback and learn from feedback. Some novice psychologists said that they are still young and they did not take supervisory training courses. Besides, they are still in the stage of exploring the society and everything is still learning. Most of them think that they are not qualified enough. However, the purpose of peer group supervision is to create an open and trustful situation where members are trying to open themselves. It seems that it is a little bit difficult at the beginning, but the researcher still believes that they will gradually realize the effect of growth after gradually establish the atmosphere of group trust.

Limitations

This study uses a semi-structured in-depth interview method of qualitative study, which collects a small but in-depth information, besides, the participants in the study were selected in Taiwan, and it cannot represent the views of all the population. Hence, the results should not infer to all situations. In the future, the research subjects can be increased and in-depth comparisons of psychologists' needs in different universities and countries. The purpose of this study is to understand the needs of peer group supervision in the universities. However, there are still many issues worth discussing in the current situation. Future researchers can conduct more on different issues.

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Cognitive and Affective Disorder Among the Elderly in Privately-Run Assisted Living Facilities in Klang Valley, Malaysia

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Abstract

This research was conducted in privately-run assisted living facilities for the elderly in the Klang Valley, Malaysia to screen for cognitive disorder and affective disorder using the Mini-Cog assessment and Patient Health Questionnaire-2, respectively. Besides finding the incidences of these disorders as well as the gender and race distribution among the sample, this research also aimed to find the association between cognitive and affective disorder with two factors; highest level of education and frequency of visits from family and/or friends in the past 2 years. This cross-sectional study managed to obtain consent to interview a total of 591 residents out of which 43 (7.2%) are found to be positive for cognitive impairment and 188 (31.8%) are found to have depressive disorder. Among the 43 residents with cognitive disorder, a majority of 16 (37.2%) did not receive any formal education and the same number also did not receive any visits from family and/or friends. Among the 188 residents with depressive disorder, a majority of 64 (34%) received secondary education and a majority of 65 (34.6%) received monthly visits from family and/or friends. There are positive associations between cognitive disorder and level of education as well as frequency of visits from family and/or friends. But interestingly, there are no associations between depressive disorder and level of education as well as frequency of visits. The reasons behind these figures will be further explored in this paper along with possible intervention methods

Keywords: Cognitive disorder, affective disorder, cognitive impairment, dementia, depression, elderly, nursing homes, old folks home, assisted living facilities, elderly in Malaysia

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Introduction

According to the data released by the Malaysian Department of Statistics in 2017, Malaysia will be an ageing nation by 2030 with the population of citizens aged 65 and above being 15.3% (Fong, 2017). Another data released by the Malaysian Welfare Department revealed that between the years 1993 to 2013, 4968 citizens were placed under the care of 211 government-run assisted living facilities nationwide (Aruna, Farik, Chan & Devindran, 2014). On top of the physiological and health problems faced by the elderly, mental health issues can also become a concern particularly among non-community-dwelling elderly.

A global review indicated that the prevalence of cognitive impairment among the elderly range between 16.1% to 44.5% (Xu et al, 2017) whereas the prevalence of depression range between 11% to as high as 85.5% (Sharifah Munirah, 2018). In Malaysia, the most relevant study that served as part of the background to this research was done by Al-Jawad, Rashid & Narayan (2007) where the sample was taken from an elderly care home in Selangor. The study found the prevalence of undetected cognitive impairment along with depression among the elderly to be 36.5% and 67% respectively.

Since the government-run facilities receive adequate funding to provide the necessary facilities, the more pressing issue would be the wellbeing of elderly living in privately-run homes that are highly dependent on fees and donations therefore might be functioning on a limited capacity, thus housing a higher prevalence of cognitive impairment and depression among the elderly living in these facilities.

With that in view, this research aims to screen for cognitive impairment and depression among the elderly residents of the privately-run assisted living facilities and find the association with two main factors, namely the level of education and the frequency of visits from family members and/or friends in the past two years. At the end of this study, we aim to use the data to create a guideline for proper care of the elderly in terms of cognitive and affective wellbeing as well as come up with simple yet effective intervention programs that can be applied by these homes for the benefit of the elderly.

Material and Methods

There are 113 privately-run homes in the Klang Valley as listed by the Malaysian Welfare Department as of January 2014; 29 of which agreed to participate in this study. A cross-sectional study using two main tools: the Mini-Cog Assessment to screen for cognitive impairment and Patient Health Questionnaire-2 to screen for depression. This was only a section of a larger questionnaire therefore it has to be kept brief in order to not tire out the elderly as it will be done via interview. The inclusive criteria are residents aged 65 and above with no hearing or speech impairment who have consented to the interview. A total of 591 residents were included in the sample.

The Mini-Cog Assessment divides the results into positive or negative for cognitive impairment whereas the Patient Health Questionnaire-2 results would be a range of

score between 0-6 in which 3 is taken as the cut-off point as positive for depression in this study.

Results

Out of 591 residents, 43 (7.2%) were found to be positive for cognitive impairment with the race distribution being Malay (44%), Chinese (40%), Indian (14%) and others (2%) while the gender distribution reads as 74% female and 26% male.

Out of 591 residents, 188 (31.8%) were found to be positive for depression with the race distribution being Chinese (84%), Malay (12%) and Indian (4%) while the gender distribution reads as 66% female and 34% male.

As for the association with level of education, a majority (37.2%) of those positive for cognitive impairment did not receive any formal education at all whereas the majority (34%) of those positive for depression received at least secondary education.
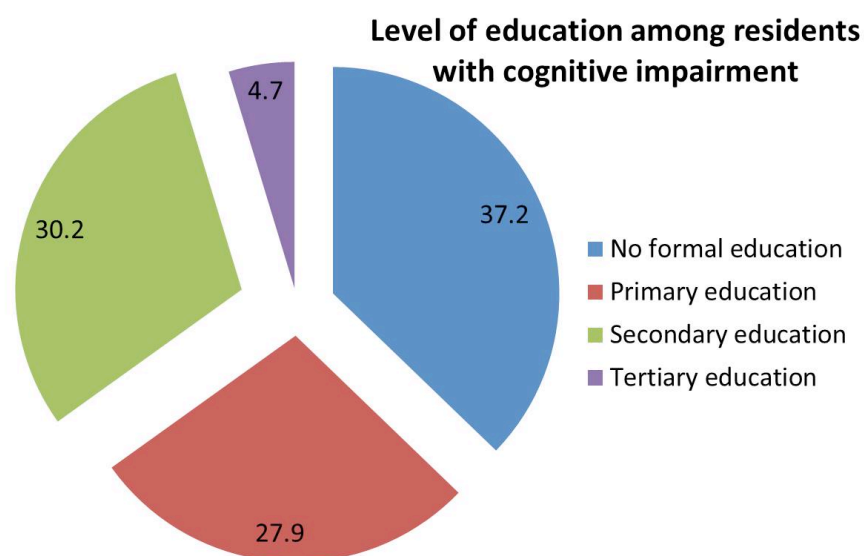
Figure 1: Level of education among residents with cognitive impairment

Level of education among residents with depression
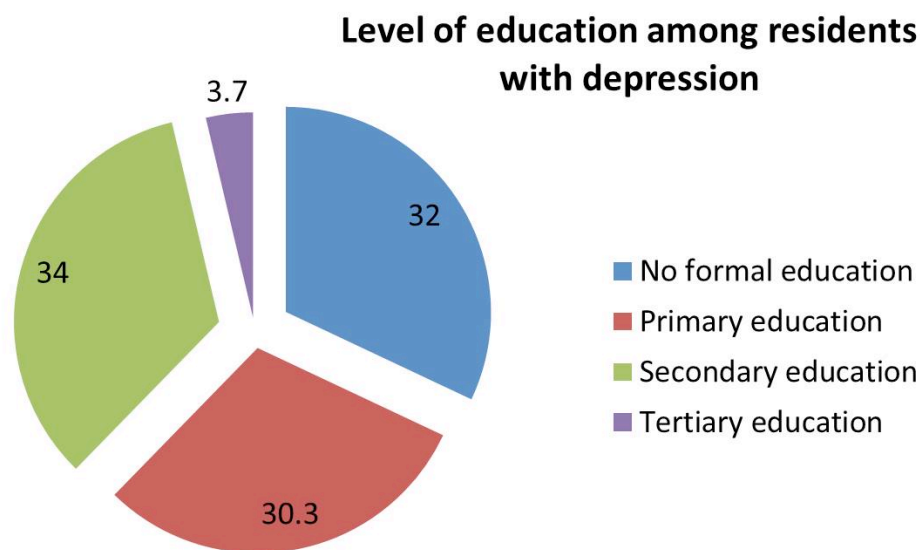
Figure 2: Level of education among residents with depression

In terms of association with frequency of visits from family members and/or friends in the past two years, a majority (37.2%) of those positive for cognitive impairment have had no contact from either family members and/or friends whereas a majority (34.6%) of those positive for depression had received monthly visits from either a family member or a friend in the past 2 years.

Frequency of visits from family / friends (in the past 2 years) among residents with cognitive impairment
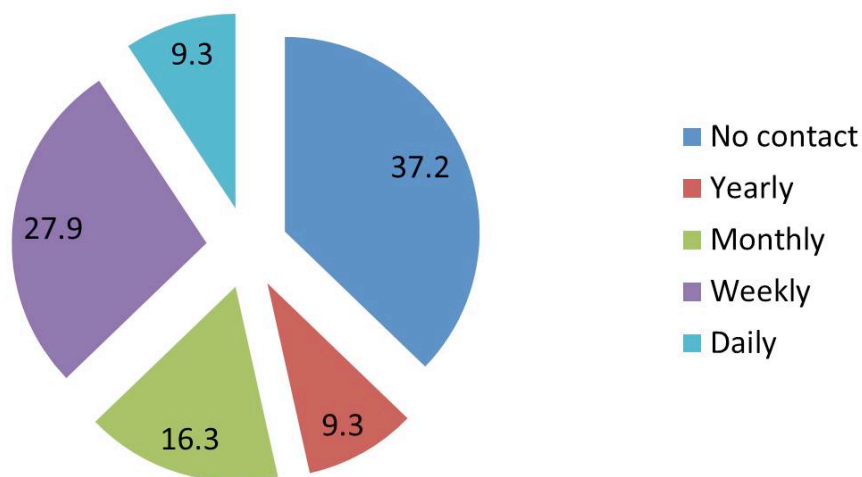
Figure 3: Frequency of visits from family members and/or friends in the past 2 years among residents with cognitive impairment

Frequency of visits from family/friends (in the past 2 years) among residents with depression
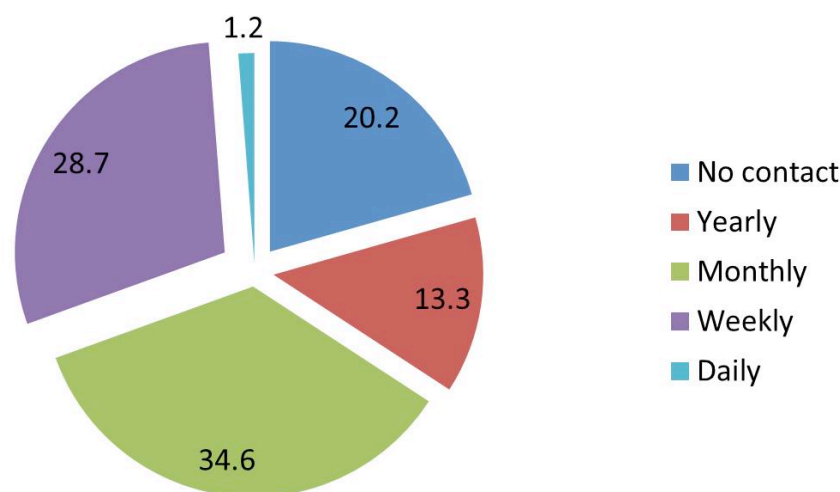
Figure 4: Frequency of visits from family members and/or friends in the past 2 years among residents with depression

Conclusion

The prevalence of cognitive impairment and depression stands at 7.2% and 31.8% respectively for this study. From the results, it can be concluded that there is an association between cognitive impairment and level of education as well as frequency of visits from family members and/or friends since the lower the level of education, the higher the prevalence of cognitive impairment and the lesser visits received from family members and friends, the higher the prevalence of cognitive impairment.

However, there seems to be no association between depression and level of education as well as frequency of visits from family members and/or friends. Discussion among the research team members as well as the caretakers of the assisted living facilities as to why this might have been proposed several interesting theories; some residents have shown signs of distress whenever they are visited by family members, which would even predispose to episodes of depression. Delving further into this matter, this may have been caused by family conflict or the fact that whenever the family member leaves, the related resident feels isolated and cut off from the outside world. As for the insignificant association between depression and level of education, the high prevalence of depression among well-educated elderly residents may have been due to the fulfillment of Maslow's basic tiers of needs which then allows them to assess their lives in terms of love and belonging.

Possible interventions that have been discussed among the research team members include developing a simple app to increase brain activity to prevent cognitive impairment as well as increased physical activity (for example, dancing) as it has been shown to significantly lower the incidence of cognitive impairment and depression. The research team members have also discussed the feasibility of providing frequent counseling for elderly suffering from depression in the assisted living facilities.

Acknowledgements

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The Role of Social Support on Perceived Financial Hardship and Parental Behaviour: A Study on a Greek Population

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Abstract
The present study investigates the effects of perceived financial hardship (subjective) due to the economic crisis on parental behaviour, and the degree to which social support may work as a moderator of the relationship between perceived financial hardship and parental behaviour. The participants were 807 parents of children aged 6-12 years that attend Public Primary Schools in urban and non-urban areas of the region of Thessaly (141 males, 666 females), and the questionnaires were exclusively completed by the parents. The following research instruments were used: (a) a self-designed questionnaire measuring the degree to which the parents feel that the economic crisis has affected several parts of their life, for example their profession, their financial situation, their relationship with the other members of their family, (b) a self-designed questionnaire about parental behaviour, measuring the degree to which the parent is involved with their child in various areas, and (c) the Multidimensional Scale of Perceived Social Support (Zimet , Dahlem, Zimet & Farley, 1998) measuring the perceptions of social support adequacy from three specific sources: family, friends and significant other. The findings showed that social support is negatively correlated with perceived financial hardship and positively correlated with parental behaviour, although the correlations are weak. In addition, a regression analysis revealed that both perceived financial hardship and social support are independent predictors of parental behaviour. The findings stress the importance of the development of primary health services which could provide psychological support to parents.

Keywords: perceived financial hardship, parental behaviour, social support

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Introduction

The economic crisis that has affected Europe the last years has had a serious negative effect on the Greek society as well, and will definitely stigmatize and form the future of the next generations. For this reason, it is thought to be of great importance to contribute to the knowledge of how such crisis can affect parental behaviour, as children are going to be the recipients of all these consequences. Gaining an understanding of the effects of the crisis on parents' behaviour will, therefore, help specialists of metal health to form better interventions of dealing with certain psychological difficulties of parents, which in turn form in a positive way their parent behaviour and as a result contribute to a better adaptation of children into the society. The present study was based on the aforementioned considerations, and was conceptualized on the basis of the importance of the parental role on the emotional and social development of youngsters, who will inevitable form the future generations. Therefore, it was sought to examine the effect that the perceived financial hardship would have on parental behaviour, and the extent to which social support can act as a moderator in the relationship between perceived financial and parental behaviour.

Davis and Mantler (2004) have used the term *financial stress* to describe the negative feeling that is being experienced by a person when they are having difficulties dealing with the financial requirements, when they cannot afford to buy the necessary goods for themselves or their family, and generally when their financial resources are not enough to make ends meet. The predominant characteristics of financial stress are feelings of terror, stress and fear, as well as anger and frustration. Despite the fact that financial stress is a subjective feeling, which can be based upon an objective measurement of an individual's financial situation or not, the objective conditions that tend to provoke a feeling of financial stress are usually referred as *financial hardship*. *Financial hardship* can be the result of many different situations, such as medical expenses, long term overconsumption, gambling and other. Moreover, financial hardship can be either acute or chronic, expected or unexpected, and can be the result of uncontrollable forces (i.e. the regional economy) or controllable forces (i.e. poor financial management) (Davis & Mantler, 2004).

The elements that define financial hardship are factors such as family income below the poverty line (depending on the family size), a decrease in family income of greater than 35% from one year to the next, a high debt-to-asset ratio, or loss of job by the principal breadwinner. From a psychological perspective, what is of vital importance is the perception of one's financial situation (*perceived financial hardship*) rather than the precise account of it, because it is the perception that causes financial stress, which in turn relates to a variety of individual, familial and social consequences. What is of vital importance is to pinpoint that if an individual fails to realise the dire predicament of their financial situation, then it is mostly likely for the experience of financial stress not to take place (Davis & Mantler, 2004).

Financial pressure or financial strain is another variable which measures the degree to which research participants report that they have had to reduce their standard of living or postpone the purchase of certain household commodities, or unable to pay their monthly bills. Indeed, a lot of research, which has looked for differences between financial hardship and financial pressure, has shown that it is the *financial pressure*

measure that is most strongly correlated with negative psychological outcomes, such as depression and marital problems. A further important finding is that the there is no significant correlation between *financial hardship* and *financial pressure*. For example, it there has been evidence that individuals without the experience of financial hardship (defined by annual income or debt) may feel financial pressure (such as lack of cash flow), while people experiencing financial hardship may not feel financial pressure (like university students) (Davis & Mantler, 2004).

One of the most important and well-known theoretical model concerning the understanding of how financial stress may affect the family is the "*Family Stress Model*", developed by Conger and his colleagues (1992). The model describes stress as a compounding process which starts with impacting one or both parents by creating stress on the individual, and then the relationship between the individuals. The individual stress, which is developed as a consequence of income loss, is very likely to lead to depression, hostility, or withdrawal. As the parent's stress level increases, the negative psychological effect of that stress response also affects the relationship between parents and children (Conger et al., 1992). For example, a review by McLoyd (1989) concluded that fathers who respond to economic loss with increased irritability, and pessimism tend to be more punitive and arbitrary, as well as less nurturant, with their children. These fathering behaviours were more likely to lead to increased levels of children's socio-emotional problems and deviant behaviours. In addition, these children tended to report lesser aspirations and future expectations (McLoyd, 1989). A survey of 622 adolescents from grade 9 to 12, which was carried out by Lempers, Clark-Lempers and Simon (1989), provided evidence for a strong association between perceived financial hardship in the family and less parental nurturance. In addition, it was found that with higher levels of perceived financial hardship there was less consistent discipline. Mistry and colleagues (2002) has also reported an association between increased distress in financially stressed parents and problems with parenting, such as being less affectionate with their children, and being more inconsistent and more punitive in their discipline. Theses parenting behaviours were then associated with more problems in children. For example, teachers rated the children less responsive parents as more aggressive, hyperactive, and that they required discipline at school more often. Finally, Margolin and Gordis' survey (2003) showed that fathers under greater financial strain were more likely to perform abusive behaviours to their children, as compared to fathers who were not under financial strain. When there was both financial stress and parental stress, there was stronger potential for child abuse.

While it may seem logical to assume that economic stress consistently leads to emotional distress, it is of vital importance to realise that financial hardship has been shown to increase reports of financial pressure, but that it does not necessarily lead to directly to emotional distress (Elder, Eccles, Ardelt & Lord, 1995). This may be the result of certain influences that may have a buffering or moderating effect on financial stress. Therefore, despite the fact that there is evidence which shows that financial strain may impact parental behaviour by increasing emotional distress, certain psychological resources, such as social support, may buffer this effect (Raikes & Thomson, 2005). Brody and colleagues (1994) have identified the failure to examine psychological resources, such as social support, as a limitation of existing research. At the same time, the presence of social support, when considered to be a psychological resource, is very possible to have an important impact on the parental response to

situations of financial strain (Raikes & Thomson, 2005). Indeed, according to Crinc and Greenberg (1987) parents who have reported higher levels of social support also have reported more positive feelings about parenting. In addition, Cutrona (1984) have reported that parents receiving more social support have displayed more responsive and sensitive parenting behaviours. Numerous studies have also shown that social support may also contribute to improvement of parental behaviours among parents who are undergoing high levels of stress (Burchina, Follmer, & Bryant, 1996; Thomson, 1995). In terms of parenting stress, Ostberg and Hagekull (2000) have shown that parents receiving increased social support reported lower levels of parental stress. Moreover, it has been reported that social support may provide specific benefits for low-income parents. More specifically, research has shown that parents reporting higher levels of social support may experience less psychological distress in conjunction with financial strain, which then leads to lower levels of parenting stress (McLoyd, 1990). Previous research has suggested that social support would be associated with lower parental stress levels, and that social support may moderate the impact of income on parental stress. In other words, parents reporting increased levels of social support may eventually feel less stress in association with low income, than parents who are low in social support (Raikes & Thomson, 2005).

In conclusion, it has been studied and supported that financial hardship may have a detrimental effect on parental behaviour, and that social support may constitute an important mediator between financial hardship and parental behaviour. However, there are no such data in Greece, indicative of the consequences of the present economic crisis on parents' behaviour, and the possible mediating effect that social support may have on the relationship between perceived financial hardship and parental behaviour. Therefore, the present paper examines the effects of perceived financial hardship (subjective), due the current economic crisis, on parental behaviour on a Greek sample, and the extent to which the relationship between perceived financial hardship and parental behaviour is mediated by social support (Figure 1).
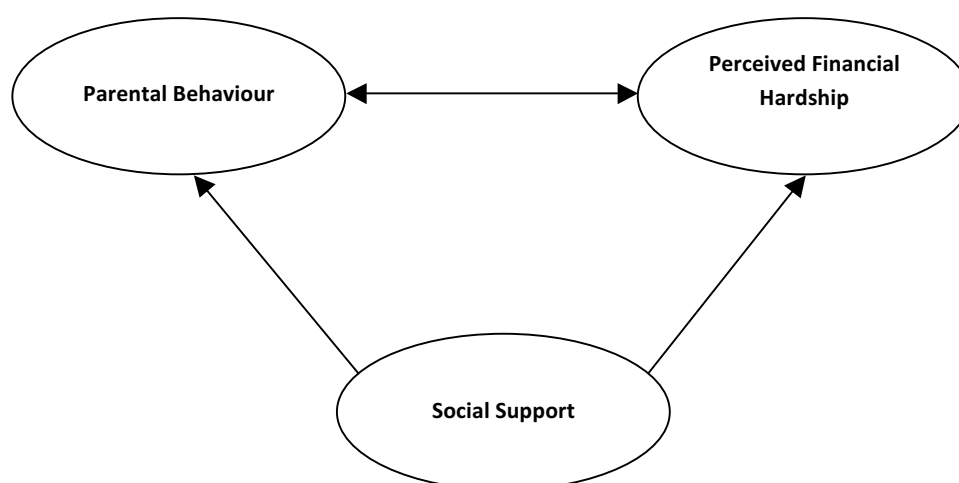
Figure 1: Theoretical model relating Parental Behaviour, Perceived Financial Hardship & Social Support

More specifically, the following hypotheses were formed:

Hypothesis 1: There will be a <u>negative correlation</u> between *perceived financial hardship* and *parental behaviour* (the more financial hardship parents might feel they are experiencing, the less positive their behaviour might be).

Hypothesis 2: There will be a <u>negative correlation</u> between *social support* and *perceived financial hardship* (the more social support parents might receive, the less financial hardship they might *fee*l that they are experiencing).

Hypothesis 3: There will be a <u>positive correlation</u> between *social support* and *parental behaviour* (the more social support parents might receive, the more positive their behaviour might be).

Hypothesis 4: The relationship between *perceived financial hardship* and *parental behaviour* will be <u>mediated</u> by *social support*.

Method

Data source and sample

The population sample consisted of 807 parents of children aged between 6-12 years who attended Public Primary Schools of Thessaly in Greece. The sample was chosen via cluster sampling, choosing with a simple, random sampling a number of schools from the urban and rural areas of the Region of Thessaly.

Procedure

The necessary documents were submitted to the *Hellenic Ministry of Education, Research and Religious Affairs*, and the relevant approval was given for the research to be conducted (Protocol Number:Φ15/279/41973/Δ1).

Schools were initially approached by phone, explaining who the researchers are and asking for an appointment with the head-teacher of the school in order to be debriefed regarding the nature of the research. This was followed by the physical presence of the researcher at every school (after an appointment had been arranged), and an information letter was given describing the important elements of the research (*where the research was conducted, the significance of the participation of each school, information related to the questionnaire, clear instructions as to how the questionnaire should be completed and how parents' anonymity would be ensured, and clarification of the anonymous and voluntary participation of the parents)*. Following the head-teacher's approval, the questionnaires were distributed to the children of each school, either by the researcher herself or by a member of the teaching staff. The children were asked to deliver the relevant questionnaire to their parents. The completed questionnaires were delivered back to the head-teacher of the each school, and were gathered by the researcher herself.

Measures

The following research tools, which were all exclusively completed by the parent-participant, were used in the study:

Demographic / General Information Scale

This is a self-designed scale which consists of 18 items, which provide information about the participants' sex, age ethnicity, education, employment status, marital status, number of children in the family, whether other people reside with the participant apart from the immediate family, the sex and age of the child examined, spouse's employment status, annual family income, and whether the family receives any benefits.

Subjective Financial Hardship

This is a six-item, self-designed scale, measuring the extent to which participants felt that the economic crisis had affected the following parts of their life: 1) their profession, 2) their financial situation, 3) their relationship with their spouse, 4) their relationship with their children, 5) their discipline enforcement on their child, and 6) their general health. Participants indicated on a 4-point Likert-type scale (0=Not at all, 3=Very much) the effect that the economic crisis has had on the previously mentioned parts of their life (a=0,762).

Parental Behaviour

This is a ten-item, self-designed scale, measuring parental behaviour (a=0.809), in terms of parents' engagement with their child, their argumentation, and their discipline enforcement. The scale comprises 3 items for Discipline Enforcement (a=0,824), 4 items for Engagement (a=0.663), and 3 items for Argumentation (a=0.640). Participants indicated on a 5-point Likert-type scale (1=Never, 5=All the time) how they behaved towards their children in terms of their engagement with their child, their argumentation, and their discipline enforcement.

Social Support

A translation of "The Multidimensional Scale of Perceived Social Support" (Zimet, Dahlem, Zimet & Farley, 1988) (a=0.876), was used to measure the perceptions of social support adequacy from three specific sources: *family*, *friends* & *significant other*. The scale consists of twelve (12) items, and each group includes four (4) items. Items 3, 4, 8, 11 are "Family" items (a=0,911), items 6, 7, 9, 12 are "Friends" items (a=0,928), and items 1, 2, 5, 10 are "Significant other" items (a=0,962). Each item is rated on a 5-point Likert-type scale, ranging from *strongly disagree* (1) to *strongly agree* (5).

Results

Descriptive Statistics

The data from the Questionnaires that were completed by the parents were gathered and were used for analysis. Descriptive analyses were carried out initially to determine parents' age and education distribution by gender, and are presented in Tables 1 and 2 respectively.

Inspection of Table 1 shows that the majority of the participants' age was between 36 and 40 years (34,8%), with women covering 37,7% and men 21,3%. of this group.

Table 1: Distribution of Parents' Age by Gender

			SEX		
			MEN	WOMEN	TOTAL
AGE	21-30	Count	0	27	27
		%	**0%**	**41.1%**	**3.3%**
	31-35	Count	7	105	112
		%	**5%**	**15.8%**	**13.9%**
	36-40	Count	30	251	281
		%	**21.3%**	**37.7%**	**34.8%**
	41-45	Count	49	202	251
		%	**34.8%**	**30.3%**	**31.1%**
	46+	Count	55	81	136
		%	**39%**	**12.2%**	**16.9%**
TOTAL COUNT			141	666	807

Inspection of Table 2 shows that the majority of the participants were Higher Education Institution graduates (37,4%), with women covering 36,6% and men 41,1% of this group.

Table 2: Distribution of Parents' Education by Gender

			SEX		
			MEN	WOMEN	TOTAL
EDUCATION	Up to Junior High School	Count	19	48	67
		%	**13.5%**	**7.2%**	**8.3%**
	High School	Count	41	255	296
		%	**29.1%**	**38.3%**	**36.7%**
	Technological Education Institution	Count	23	119	142
		%	**16.3%**	**17.9%**	**17.6%**
	Higher Education Institution	Count	58	244	302
		%	**41.1%**	**36.6%**	**37.4%**
TOTAL COUNT			141	666	807

Further descriptive statistics were carried out to determine the *distribution of the experience* of *perceived (subjective)*. Table 3 shows the percentage of the participants that have *felt to some degree* that these areas of their life have been affects by the economic crisis.

Table 3: Frequencies and Percentages of Areas of Everyday Life Affected by the Economic Crisis

AREAS OF EVERYDAY LIFE AFFECTED BY THE ECONOMIC CRISIS	FREQUENCY	%
Work	752	**94%**
Financial Situation	800	**99.2%**
Relationship with Partner	531	**65.8%**
Relationship with Children	426	**52.8%**

Discipline Implementation on Children	318	**39%**
General Health	572	**70.9%**

Testing Hypotheses 1 & 2

The first hypothesis of the study was that there would be a <u>negative correlation</u> between *perceived financial hardship* and *parental behaviour* (the more financial hardship parents might feel they are experiencing, the less positive their behaviour might be). The second hypothesis was that that there would be a <u>negative correlation</u> between *perceived financial hardship* and *social support* (the more social support parents might receive, the less financial hardship they feel they are experiencing).

In order to test this, a **Pearson Product-Moment Correlation Coefficient** was computed to assess the relationship between: *perceived financial hardship, parental behaviour* and *social support*. The results of the analysis showed that there is a significant *negative correlation* between *perceived financial hardship* and *parental behaviour* (r= -0.133, DF=805,   p<0,001), and a significant *negative correlation* between *Perceived Financial Hardship* and *Social Support* (r= -0.286, DF=805, p<0,001). The findings are presented in Table 6.

Table 6: Relationships between Perceived Financial Hardship, Parental Behaviour & Social Support

Correlations		*Parental Behaviour*	*Social Support*
Perceived Financial Hardship	Pearson Correlation	**-.133****	**-.286****
	Sig. (2-tailed)	**,000**	**,000**
	N	807	807

**Correlation is significant at the 0.001 level (2-tailed)

Testing Hypothesis 3

The third hypothesis of the study was that there would be a <u>positive correlation</u> between *social support* and *parental behaviour* (the more social support parents might receive, the more positive their parental behaviour might be). In order to test this, a further **Pearson Product-Moment Correlation Coefficient** was computed, which showed that there is a significant *positive correlation* between *social support* and *parental behaviour* (r= -0.313, DF=805,   p<0,001).The findings are presented in Table 8.

Table 8: Relationship between Perceived Social Support & Parents' Mental Health Hardship

Correlations		*Social Support*
Parental Behaviour	Pearson Correlation	**.199****
	Sig. (2-tailed)	**,000**
	N	807

**Correlation is significant at the 0.001 level (2-tailed)

Testing Hypothesis 4

The fourth hypothesis of the study was that the relationship between *perceived financial hardship* and *parental behaviour* would be mediated by *social support*. In order to test this, a **Multiple Regression Analysis** was conducted to examine the degree to which *Social Support* and *Perceived Financial Hardship* (Independent variables) explain *Parental Behaviour* (Dependent variable). The results of the regression indicated that the model explained 4,6% of the variance, and that the model was a significant predictor of Parental Behaviour ($F_{2, 804}=19.37$, p=0.000). According to the results, both Social Support ($\beta= 0.339$, p=0.000) and Perceived Financial Hardship ($\beta= -0.019$, p=0.02) contributed significantly to the model, although the contribution of Social Support seems to be more significant. Therefore, increased levels of positive Parental Behaviour are related to decreased levels of Perceived Financial Hardship, and increased levels of Social Support. The findings are presented in Table 9.

Table 9: Multiple Regression Analysis of Parental Behaviour Predicting Factors

Variable	B	Standard Error	Beta	t	Significance of t
Perceived Financial Hardship	-0.02	0.01	-0.08	-2.29	0.02
Social Support	0.34	0.07	0.18	4.89	0.00

Dependent Variable: Parental Behaviour

Conclusions

This study examined the effect of perceived financial hardship, as a consequence of the current economic crisis, on the behaviour of parents of children aged between 6-12 years. In addition, it was tested whether social support can have an effect on the relationship between perceived financial hardship and parental behaviour.

The statistical analysis of our data confirmed Hypothesis 1, which supported that there would be a negative correlation between *perceived financial hardship* and *parental behaviour*. In other words, our results showed that the more financial hardship parents might feel they are experiencing, the less positive their behaviour towards their children might be. This is in line with previous research, which has shown that financial hardship affects parental behaviour. For example, McLoyd's review (1989) has concluded that fathers who demonstrate irritability and pessimism regarding their experience of financial loss tend to be more nurturant and more punitive and arbitrary in their interactions with their children. McLoyd has also indicated that although fathers who are undergoing financial stress as a result of their unemployment status may spend more time with their children, this extra time is not usually quality time. In addition, Lempers, Clark-Lempers and Simons (1989) observed that under conditions of increased financial hardship, parenting tended to be less child-centred and nurturant, and more parent-centred, rejecting and inconsistent.

The second Hypothesis was that that there would be a negative correlation between *perceived financial hardship* and *social support* (the more social support parents

might receive, the less financial hardship they might be experiencing). Indeed, our analyses provided evidence of a significant negative correlation between these two variables. Numerous studies have shown that increased levels of perceived financial hardship can lead to increased levels of stress in individuals (Davis & Mantler, 2004). However, high levels of social support can have a "buffering" or "mitigating" effect on the experience of stressful events (Cohen & Wills, 1985). The analysis of our data has shown that it is probably those individuals who are experiencing higher levels of social support that *tend to see their financial situation* in a *more positive way*. This particular observation could be the result of either the fact that these participants have people around them to support them, or maybe because by this contact they realise that the majority of people are undergoing a rather similar difficult financial situation as a result of the present economic crisis.

Our study has also provided evidence for the third Hypothesis, which supported that there would be a positive correlation between *social support* and *parental behaviour*. The analysis revealed that the more social support parents received, the more positive their parental behaviour was. This is in line with previous research which has shown that social support can have a significant effect on parental behaviour in mothers who are homeless (Marra, Lin, McCarthy, Ford, Rodis & Frisman, 2009). According to Cohen and Wills (1985), emotional and instrumental (e.g., financial, transportation, physical assistance) support received from family, friends and mental health professionals can have a buffering effect on the negative effects of stress. This in turn can lead to increased levels of effective and consistent parental behaviour (Abidin, 1992; Kotchick, Dorsey, & Heller, 2005). In addition, it has been shown that informal support from family predicts adolescents' positive parental behaviour (Unger & Wandersman, 1998). Further research has shown that when social support was provided to adult mothers, there was increased maternal positive affect, increased positive perspectives of their children, and increased responsiveness in their interactions with their children (Crinc, Greenberg, & Slough, 1986; Priel & Besser, 2002). Very interestingly, previous research has also revealed the reverse effect. In other words, it has been found that when social support was perceived as dissatisfying, stressful, or limited, it was related to poor parenting competence, disengaged parenting, and high psychological distress (Kotchick, Dorsey, & Heller, 2005; Silver, Heneghan, Bauman, & Stein, 2006). Furthermore, Nyamathi, Wenzel, Keenan, Leake and Gelberg (1999) showed that conflict within an otherwise supportive relationship can have a detrimental effect on parents and children, such as an increased risk for physical and sexual abuse, while Nitz, Ketterlinus and Brandt (1995) provided evidence for less positive parental behaviour. It should be noted that our study did not include measurement of conflict or negative social interactions. It would, therefore, be very interesting in future studies to include a measure of conflict within the different types of social support that the participants might be receiving, to determine whether relatively low levels of social support may be sufficient to enable parents to use parenting skills that may be crucial to their own and their children's well-being.

Finally, we tested our fourth Hypothesis, which supported that the relationship between *perceived financial hardship* and *parental behaviour* would be mediated by *social support*. The Multiple Regression Analysis revealed that both Social Support and Perceived Financial Hardship contributed significantly to the model, and that the contribution of Social Support was more significant. In other words, social support is

an important determinant of the association between perceived financial hardship and parental behaviour. This finding is in line with research that has shown that a higher percentage of social contacts was related to lower levels of parenting stress (Raikes & Thomson, 2005). For example, parents reporting higher levels of social support may experience less psychological distress related to financial strain, which then leads to lower levels of parenting stress (McLoyd, 1990).

There are certain limitations regarding the present study. First of all, the data were cross-sectional in nature, which limits conclusions about the direction of the relationships. In addition, the study was based on self-reported accounts of parental behaviour and social support, and as a result the researchers cannot be certain about the validity of the description of certain behaviours in term of both the "parental behaviour" and the "social support" scales. As a result, we cannot be sure if the participants may have over- or under-estimated their parental behaviour or the levels of social support that they were receiving. In a future study it is suggested that the researchers use observational methods (i.e. physical presence of the researcher and/or video recording) regarding the parental behaviour measurements, in order to have a better picture of how parents are behaving and interacting with their children.

A further limitation of the present study is the fact that there was no measurement included of parents' personality characteristics. It has been reported that the effect of an economic crisis can differ from one person to another, which is something tat can be attributed to individual characteristics. Factors unique to different personalities, such differences in handling financial matters (i.e. tendency to save or spend money, accumulation of debts, knowledge of financial management) should be taken into account (Bouras & Lykouras, 2011). Furthermore, other characteristics which can make a person more vulnerable to psychosocial threats (such as neurosis or low tolerance to rejection) (Tivendell & Bouronnais, 2008), characteristics reflecting the need to control situations (Van Hooft & Crossley, 2008), or characteristics dealing with the general feeling of self-confidence and self-worth (Judge & Bono, 2001) have been reported to predict the way people deal with financial loss or unemployment. As a result, we suggest that in a future study an assessment of personality characteristics should be included in order to be able to have more reliable results regarding the causality of the relationships among the variables.

Understanding the causal mechanisms of parental behaviour, as a result of the current economic crisis, is important for forming policy development. Although our study was of cross-sectional nature, as well as the aforementioned limitations, do not allow us to make clear conclusions regarding the causation, the nature of the findings suggest some possible policy implications. Taken into account the importance of financial hardship as an explanatory factor of parental behaviour, an effective policy solution could be to target solution-oriented coping strategies to parents who report financial difficulties, such as financial management interventions. Finally, the policy system should also take into account the mediating effect of social support in the relationship between perceived financial hardship and parental behaviour, and develop better supporting programs. For example, by helping parents identify some of their problems and form certain solutions, or by helping parents feel in control of what happens to them, programs may be able to encourage feelings important in dealing with problems, such as self-efficacy (Raikes & Thomson, 2005). As high levels of parental stress may lead to negative outcomes for children, especially for

those undergoing serious financial hardship, identifying predictors of parental stress can enhance efforts to promote the well-being of children and families who are seriously struck by the current economic crisis.

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Influence of Familiarity and Social Sensitivity on Performance in a Consensus Game

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Abstract

This study focus on the familiarity and social sensitivity of group members and investigated how they affect group decision making. "If you have distress in the desert?" was used for group decision making scenario in this study and its task is to list 12 items in order of importance for survival. 186 participants were divided into group of 4-6 people. At first, they were told to list the items alone and after that they were told to list them by discussion in the group. Then, they took reading the mind in the eyes test (RMET) to measure their social sensitivity. Finally, they were asked to answer their familiarity. Effect of familiarity (high, middle, and low) and social sensitivity (HIGH, LOW) were analyzed using ANOVA. Results indicated that HIGH social sensitivity group were better the group score than LOW social sensitivity group especially in high familiarity group. In the analysis of the difference between individual and group score, HIGH social sensitivity group were higher the difference between individual and group score than LOW social sensitivity group especially in high familiarity group similarly. These results suggest that highly socially sensitivity people have active exchange information and opinions therefore group decisions are more accurate than individual's decisions. These findings represent that effective group decision making or problem solving require attention to not only the familiarity or relationship of members but also the diversity of member perspectives and the necessary to understand and to collaborate with other people in order to survive and thrive.

Keywords: Group Decision Making, Consensus Game, Familiarity, Social Sensitivity

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Introduction

We have a greater opportunity to problem solving or decision making in a group because group decision making has the following merits. First, group members can collect extensive information about the problem therefore group decisions are more accurate than individual's decisions. Group members can share a lot of knowledge and arrive at decision alternatives which a single individual cannot have thought of. Second, group members can commit to implement their decisions through group thinking. It causes that group members can take a positive attitude toward each other and develop their mind of cooperation amongst the group members. Third, group decision making offers diverse viewpoints of various members of the group compare to individual thinking. Finally, group members can be more creative or innovative to make quality decisions because group decision making encourages new and better ideas.

Many studies have examined and indicated the effects of group decision making. Kerr and Tindale (2004) indicated that groups are often chosen to make decisions rather than individuals because of their greater knowledge base and the diversity of their member's perspectives. Peterson, Owens, Tetlock, Fan, and Martorana (1998) suggested that the intragroup interaction of management team members is directly related to decision quality and financial performance. Sager and Gastil (2006) mentioned how group members communicate each other and make decisions. They suggested that the participants of discussion were more satisfied using consensus rule, compare to majority rule, in most research.

Consensus is a form of cooperative, non-coercive decision-making. It is not a process for determining whose ideas are best, but searching together for the best solution for the group. It is not decided by one person, a minority, or a majority, but by everyone and the decisions should reflect the integrated will of the whole group. Even if it had been established that consensus can produce more satisfying decisions, there is little understanding about why or how groups might adapt a consensus. Sager and Gastil (1999) investigated how decide their decision rule depending on the quality and quantity of communication. They showed that the quality and quantity of communication and the percentage of members within each group who reported using the consensus decision rule. This result indicated that it is important for consensus or satisfying group decisions to facilitate or encourage communication each other especially open and honest communication. But they did not mention about the effect of the situation or setting for communication.

Prior research has suggested that the familiarity of group member has the effect on group decision making. When members are familiar with each other, groups are more likely to pool distributed information than when all members are strangers (Gruenfeld, Mannix, Williams & Neale, 1996). Gruenfeld et al.(1996) also demonstrated that familiar group could solve the problem without all information shared while stranger group could solve it only when information has fully shared but the cause of this result was not described in detail.

Then, this study focus on the familiarity and social sensitivity of group members. And the purpose of this study is to investigate how they affect group decision making.

Definition and measurement of social sensitivity

Social sensitivity describes the proficiency at which an individual can identify, perceive, and understand cues and contexts in social interactions along with being socially respectful to others. This is an important social skill and having high levels of social sensitivity can make you more well-liked and successful in social and business relationships. Wooley, Chabris, Pentland, Hashmi, and Malone (2010) suggested that the strongest predictor of collective intelligence seems to be the average social sensitivity of the group members. Curşeu, Pluut, Boroş and Meslec (2015) suggested that socially sensitive group members attend to the interpersonal dynamics in groups and create a positive interpersonal atmosphere that is ultimately conducive to task performance.

Social sensitivity was measured with Reading the Mind in the Eyes Test (RMET) (Baron-Cohen, Wheelwright, Hill, Raste and Plumb, 2001). The test consists of 36 images with eye-regions of the face of various individuals, each representing a particular mental state (e.g., arrogant, desire, insisting). Participants had to choose among four options the mental state that was represented in the image. The correct scores were summed up, with 36 being the possible maximum score for the task. Figure 1 displays an example of a stimulus used in Reading the Mind in the Eyes Test.

Figure 1. An example of a stimulus used in Reading the Mind in the Eyes Test: The word choice was annoyed, hostile, horrified, and preoccupied (correct).

Introduction to consensus game

Consensus game is group communication and decision making exercise, with many variations. This game is to examine the effectiveness of group discussion by comparing the individual score with group score. One of the most famous consensus game was "NASA moon survival task" developed by Hall (1971). Group members should be instructed to rank 15 items in order of importance for survive. At first, they told to rank them without communicating with group members. After that, they told to reconsider the items and come up with a new set of rankings. In the group part of the exercise, group members should be instructed to employ the method of group consensus, which requires each group member to agree upon the rankings for each of the 15 survival items. After revealing the correct answers and allowing groups to calculate their scores, record the group score and the individual score from each group. Subtract the group score from the individual score; this provides the "synergy" score.

Method

Participants. 186 students (91 women and 95 men) at Hokkai Gakuen University in Sapporo, Hokkaido, Japan participated in this study in exchange for course credit. They were divided into group of 4-6 people and they decided to their groups themselves.

Task. "If you have distress in the desert?" was used for group surviving scenario in this study. The reason for using this scenario is that it is easy for participants to understand settings and situation. In this scenario, Participants were instructed to imagine that the plane you are boarding made an emergency landing in a desert, then the plane was crushed. You are miraculously unhurt and could bring out 12 items from the plane. Participants' task is to listing 12 items in order of importance for survival.12 items were flashlight, salt tablet(1000 tablets), aerial photomap, a liter of water per person, big rain chief, compass, a book about eatable desert animal, light coat per person, 45 caliber pistol, hand mirror, a red-and-white parachute, and vodka(about 2 liter). The score is calculated by the difference between listed importance order and model answer. The score is lower, the better (The highest score is 0).

Procedure. At first, each participant was told to list the 12 items in order of importance for survival without talking or discussion with others. After that, all participants were told to list them by discussion in the group. After revealing the correct answers and allowing groups to calculate their scores, record the group score and the individual score from each group. Then, they took reading the mind in the eyes test (RMET) to measure their social sensitivity. Finally, they were asked the number of familiar and close member, acquaintance member, and stranger member in their group to measure their familiarity.

Figure.2 Comparison of group score

Figure.3 Comparison of the difference between individual and group score
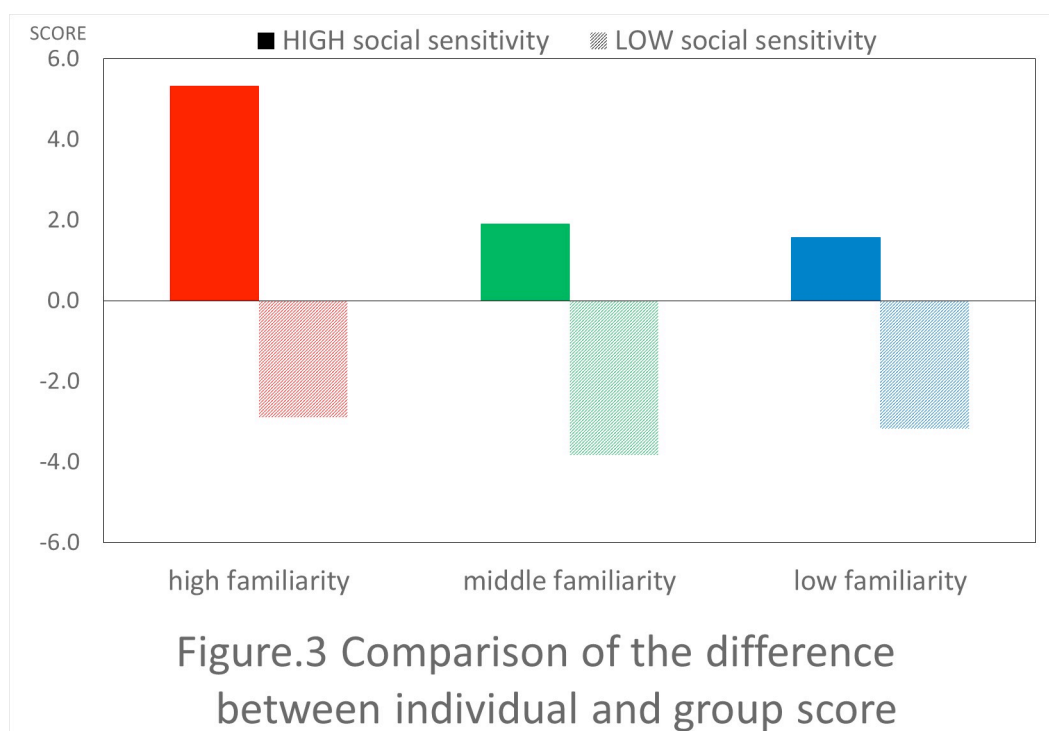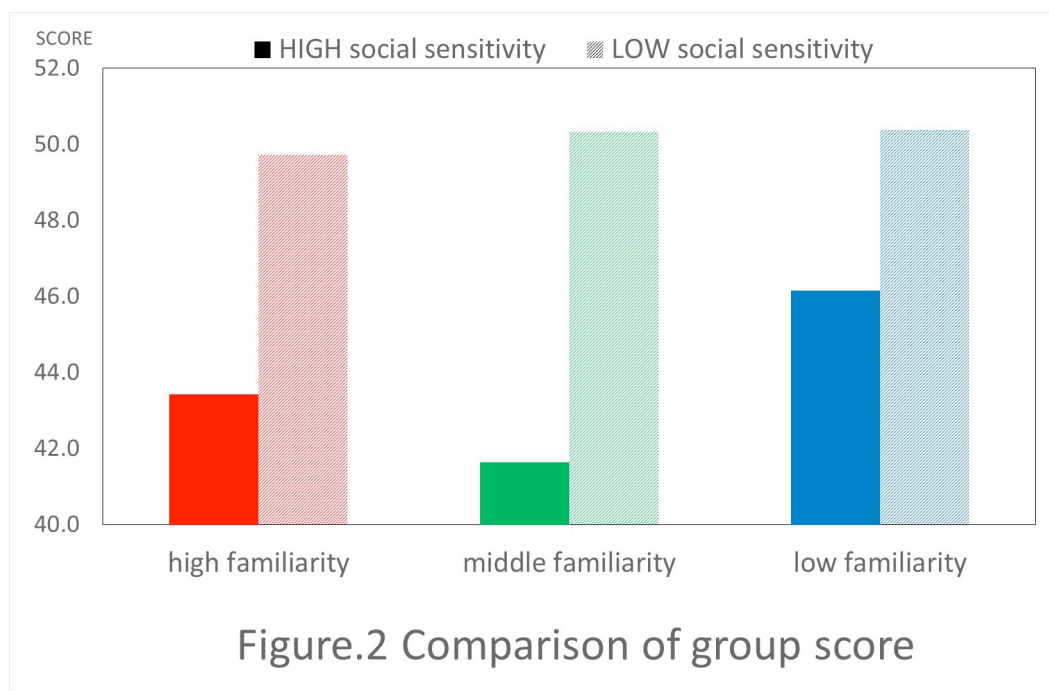
Results

Before analysis, participants were divided into 2 groups by the score of RMET. Of the 186 participants, 114 were in the HIGH social sensitivity group (the mean level of RMET score was 22.4), while 72 were in the LOW social sensitivity group (the mean level of RMET score was 15.6). Then, they were divided into 3 groups (high, middle and low) by the number of familiar member in the group. Of the 186 participants, 65 were in the high familiarity group (the mean number of similar member was 3.2), 24 were in the middle familiarity group (the mean number of similar member was 1.6), and 97 were in the low familiarity group (the mean number of similar member was

0.6), Using analysis of variance (ANOVA), I examined the effects of social sensitivity (HIGH or LOW) and familiarity (high, middle and low) on the performance of consensus game. In the analysis of group score, the ANOVA with the factors of social sensitivity and familiarity revealed main effect for social sensitivity [$F(1, 180) = 24.53$, $p < .001$], but no main effect for familiarity [$F(2, 180) = 1.50$, $n.s.$],and no interaction of social sensitivity and familiarity [$F(2, 180) = 0.98$, $n.s.$]. Pairwise comparisons using a Bonferroni correction indicated that HIGH social sensitivity group were lower (it means better score) the group score than LOW social sensitivity group in high familiarity group ($p < .001$). The same trend is observed in middle familiarity group ($p < .01$) and low familiarity group ($p < .01$). These results are shown in Figure 2.

In the analysis of the difference between individual and group score, the ANOVA with the factors of social sensitivity and familiarity revealed main effect for social sensitivity [$F(1, 180) = 13.54$, $p < .001$], but no main effect for familiarity [$F(2, 180) = 0.95$, $n.s.$],and no interaction of social sensitivity and familiarity [$F(2, 180) = 0.63$, $n.s.$]. Pairwise comparisons using a Bonferroni correction indicated that HIGH social sensitivity group were higher the difference between individual and group score than LOW social sensitivity group in high familiarity group ($p < .001$). The same trend is observed in low familiarity group ($p < .05$), but not observed in middle familiarity group ($n.s.$). These results are shown in Figure 3.

Discussion

The main purpose of this study was to examine whether the familiarity and social sensitivity of group members affect group decision making. The finding revealed that HIGH social sensitivity of group members have a good influence on group decision making especially group members were familiar with each other. Another finding was that social sensitivity of group members improved the score compared to individual score. These findings suggest that highly socially sensitivity people have active exchange information and opinions therefore group decisions are more accurate than individual's decisions.

The results of this study offer further corroboration of the findings in previous works. Hinsz (2015) explained that the effectiveness of group decision making compared to individual were information pooling, error correction, meta-knowledge, reliability and information sharing. Meslec, Aggarwal, and Curşeu (2016) indicated that the factor of social sensitivity were positively and significantly correlated with the collective intelligence factor.

While this study shows the effect of social sensitivity on group decision making, the results of this study partially shows the effect of familiarity on group decision making. A possible contributor to this result might have been the measurement of familiarity in participants groups. Gruenfeld et al.(1996) constructed 3-person groups which were composed of three individuals familiar to each other, two familiar individuals and a stranger, or three strangers. Thus, more strictly defined and controlled the familiarity of group member might be provide evidence for a relationship between familiarity and group decision making. However the result of this study suggests that group decision making is partially influenced by familiarity especially among highly socially sensitivity groups.

Further researchers should examine whether personality of group members affect group decision making. Barrick, Stewart, Neubert and Mount (1998) suggested that group performance and viability depends on the personality, especially conscientiousness, agreeableness, extraversion, and emotional stability of group members.

Another questions worthy of future research is to improve to the quality of group decision making. Previous empirical results show that collective performance in cognitive judgment and cognitive decision making tasks rarely exceeds the performance of the best individual in the group (Meslec & Curşeu, 2013). Further research would expand the possibility of group decision making and the necessity of social sensitivity and group synergy.

Conclusion

In summary, this study has demonstrated that social sensitivity of group members affect group decision making especially when members are familiar with each other. In other words, if only the group members are familiar with each other, group decision making will not always go well. This study suggests that it is important for group decision making to possess unique knowledge or differing point of view. Thus, effective group decision making or problem solving require attention to not only the familiarity or relationship of members but also the diversity of member perspectives. This study represents that social sensitivity is the important ability to understand and to collaborate with other people in order to survive and thrive.

Acknowledgements

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Psychology Career Development Enhancement:
A Case Study of the Fourth-Year Thai Undergraduate Class

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Abstract

With the work field of Psychology remaining at a budding stage within Thailand, psychology undergraduates – while increasing in number – reportedly experience difficulties identifying their future psychological work. The course "Career in Psychology" hence was offered, to assist students to explore their psychology career options. With the increased enrollment and course limited time resource, classroom action research was conducted to compare the benefits of the five learning components in the course. Participants were thirty-two fourth-year public-university undergraduates. The majority of them (94%) were in an undergraduate international program in psychology with the remaining being foreign exchange students. The students responded to self-report measures where they indicated how much they perceived the benefits and relevance of the course five learning components (i.e., Self-evaluation, Interviews of Psychology Professionals, Career Site Visit, Career Counseling, and Integrative Analysis of Career Exploration) and relevant open-ended questions. One-way Analyses of Variance (One-way ANOVAs) were conducted for data analysis, with post-hoc comparisons. Findings suggested that the students perceived relatively high benefits and high relevance of the five learning components. Indeed, they did not perceive them as significantly different in terms of their benefits. Still, in terms of their relevance, they found Career Counseling significantly more relevant to their career exploration than a Career Site Visit. Findings were discussed in terms of implications for future class time and resource management. Generalizability of the findings to other psychology career development program within the contexts in which psychology was yet to be well-established was also discussed.

Keywords: Learning Components, Perceived Benefits, Career Exploration

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Introduction

With the work field of Psychology remaining at a budding stage within Thailand, psychology undergraduates – while increasing in number – reportedly experience difficulties identifying their future psychological work. The course "Career in Psychology" hence was offered, to assist students to explore their psychology career options. The course is one of the compulsory courses in the Bachelor of Science (B.S.) in Psychological Science (International Program). The course is aimed at enhancing the readiness in career decision of students in this international program. Its main objectives are twofold: 1) to equip students with opportunities to engage in career exploration and 2) to increase students' understanding of career options within the country, given some of the students' international educational background.

Career in Psychology is designed as a one-credit hour course. Thus far, students have rated the course as beneficial in assisting them in their career exploration. The benefits could be attributable to the five components of the course learning activities. These components are:1) career self-assessment, 2) career interview; 3) individual career counseling,4) career site visit, and 5) the preparation of an Integrative Analysis of Career Exploration report.

Each learning component is based on well-recognized empirically-based literature on career exploration and has been shown promising in assisting students in their career exploration in various ways. To begin with, based on the notion that individuals with different personal characteristics flourish in distinctive careers (Spokane & Cruza-Guet, 2005), career self-assessment activity helps the students to become more aware of their personal characteristics so as to incorporate them into their career exploration.

Drawn from the Social Cognitive Theory (Bandura, 1986), the two activities of career interview--- students' interviewing of professionals in psychological fields of their interests--- and career site visit--- students' visit to a psychological workplace of the class consensus--- help provide students with vicarious learning of psychological professions. Then, in the fourth activity, students attend an individual career counseling for a minimum of three sessions from the Faculty Wellness Center.The benefits of career counseling have been well documented (Brown & Lent, 2005).

Then, in the final activity, students will have opportunities to evaluate how well they have progressed in the integrative analysis of their career decision. Self-awareness and such an evaluation have been shown to be beneficial for goal setting (Schunk, 1996) and should provide the students with the basis for establishing appropriate goals in their subsequent career development.

Despite these benefits, with the course time limit (i.e., one-credit hour) and a significant increase in the number of students registering in the course, it become essential to effectively review how to allocate appropriate course resources to each activity. The review could be conducted by comparing the students' perception of the benefits of each course component. In addition to these perceived benefits, the degree to which the students perceive the relevance of each learning component to their career exploration, will be examined. With past findings suggesting the association between perceived benefits and relevance (Robertson, 2013), information on the latter

should help clarify students' perception of the former. This should lead to the more fruitful planning of class time and resource management.

Methodology

Participants

Participants were students enrolling in the class "Career in Psychology", offered by the B.S. in Psychological Science, Academic Year 2016.

Whereas the total enrollment was thirty-four students, thirty-two of them (i.e., 94%) participated in the current study. The remaining two students (i.e., 6%) were absent in the final class meeting where data collection took place.

The majority of the respondents were fourth-year students in the program (i.e., $N = 27$, 84%). Some of them (i.e., $N = 5$, 16%), however, were foreign exchange students who attended the program for a period of one semester. These students also majored in Psychology and attended an undergraduate program in other Southeast Asian countries. Similar to their Thai classmates, these foreign exchange students participated in the course since the very beginning and attended all of the learning components previously outlined. The exchange students had a good command of English. On the learning components where the native language was involved, hence, special arrangements were made to ascertain that these students were well supported.

Instrumentations

In addition to the measures of perceived benefits and perceived relevance of the five learning components, which will be subsequently outlined, additional instruments were administered. These entailed self-rating questions regarding students' perceived progress in their career decision, their urgency in achieving the decision, and their effort expenditure in career exploration. Additionally, two open-ended questions were provided regarding the students': 1) recommendations for improving the five learning components and 2) overall recommendations for the course.

Perceived Benefits. The students' perception of the benefits of the five learning components was measured using a self-report Likert-type format. Students rated each of the five learning components in terms of its benefit referring to a response format ranging from 1 (Least Beneficial) to 5 (Most Beneficial). A higher score indicated higher benefit perception of the given component whereas the lower score indicated the opposite.

Satisfactory psychometric properties were found for the measure of Perceived Benefits employed here. Corrected Item-Total Correlation coefficients (CITC) were beyond the significant level, ranging from .34 and .76. The Chronbach's alpha estimate was .81, suggesting high internal consistency.

Perceived Relevance. Students' perception of the relevance of the five learning components was measured using a self-report Likert-type format. Students rated each of the five learning components in terms of its relevance to their career exploration referring to a response format ranging from 1 (Least Relevant) to 5 (Most Relevant). A higher score

indicated higher relevance perception of the given component whereas the lower score indicated the opposite.

Satisfactory psychometric properties were found for the measure of Perceived Relevance employed here. Corrected Item-Total Correlation coefficients (CITC) were beyond the significant level, ranging from .45 and .80. The Chronbach's alpha estimate was .83, suggesting high internal consistency.

Data Collection

Data collection was conducted in the last class meeting. Then, students were asked to respond to the measures previously outlined. Response time was 5-10 minutes. Precaution was taken to ascertain to the students the anonymity of their responses and the use of the responses for the key purposes of subsequent class resource planning and management.

Data Analysis

SPSS (Version 18) was used for data analysis. The analysis started with the descriptive analysis for the distribution, mean, and standard deviation of scores for the key study variables. Then, One-way Analyses of Variance (One-way ANOVAs) were conducted after relevant assumptions were tested and confirmed.

Whereas the examination of the effects of the learning components on the two dependent variables suggested a multivariate data analysis. A One-way Multivariate Analysis of Variance (One-way MANOVA) was not selected. This was because the number of the participants in the current study, 32 students, were relatively small and did not meet the minimum MANOVA sample size requirement. According to Hair et al. (2010), there should be at least 20 participants for each of the two dependent variables, leading to a minimal sample size of 40. Therefore, One-way Analyses of Variance (One-way ANOVAs) were conducted twice to examine whether students' perception of the learning components differ in the two dependent variables. Such employment, however, entailed limitations in terms of an increased chance of a Type l error (Hair et al., 2010).

While this was not the main focus of the current study, additional data analyses were conducted based on students' responses to the two open-ended questions regarding their: 1) recommendations of ways to improve the five learning components and 2) overall course recommendations. Frequency and percentage were calculated to summarize key recommendations obtained.

Results

Table 1 illustrated the level of urgency, effort expensed, and progress made toward career decision as perceived by the participants, together with the descriptive statistics of key study variables.

Table 1: Descriptive Statistics of Key Study Variables

Variable	N	M	SD	Min	Max	Range	Possible Range
Perceived Benefits							
Self-assessment	31	4.16	.69	3.00	5.00	2.00	1.00-5.00
Career Interview	27	4.22	.89	2.00	5.00	3.00	1.00-5.00
Career Site Visit	29	4.07	.92	2.00	5.00	3.00	1.00-5.00
Career Counseling	32	4.63	.71	2.00	5.00	3.00	1.00-5.00
Integrative Report	32	4.09	.86	2.00	5.00	3.00	1.00-5.00
Perceived Relevance							
Self-assessment	31	4.26	.68	3.00	5.00	2.00	1.00-5.00
Career Interview	27	4.22	.93	2.00	5.00	3.00	1.00-5.00
Career Site Visit	30	4.03	.89	2.00	5.00	3.00	1.00-5.00
Career Counseling	32	4.69	.54	3.00	5.00	2.00	1.00-5.00
Integrative Report	30	4.50	.63	3.00	5.00	2.00	1.00-5.00
Career Exploration							
Perceived Urgency	31	4.16	.93	1.00	5.00	4.00	1.00-5.00
Effort Expenditure	31	4.10	1.04	2.00	5.00	3.00	1.00-5.00
Perceived Progress	31	3.94	.93	2.00	5.00	3.00	1.00-5.00

With support for its assumption, One-way ANOVA was employed twice for data analyses. Outcomes were shown in Tables 2 and 3:

Table 2: The Effects of Learning Components on Perceived Benefits

Variables	Source	SS	df	MS	F	Sig
Perceived Benefits	Between	6.48	4	1.62	2.44	.05
	Within	96.94	146	.66		
	Total	103.42	150			

Table 3: The Effects of Learning Components on Perceived Relevance

Variables	Source	SS	df	MS	F	Sig
Perceived Relevance	Between	8.03	4	2.00	3.64	.007**
	Within	79.94	145	.551		
	Total	87.97	149			

*Note. **p < .01*

Findings suggested that students' perception of the benefits of the five learning components were marginally different. With increased chances of Type 1 errors inherent in multiple analyses, precaution was taken not to validate the marginally significant difference observed in perceived benefits.

However, significant differences were found in students' perception of the relevance of the five learning activities ($p < .01$). Hence, post-hoc comparisons were conducted using Scheffe. Findings suggested that the students perceived career counseling ($M = 4.68$, $SD = .54$) as significantly more relevant to their career exploration than career site visit ($M = 4.03$, $SD = .89$), $p < .05$. These outcomes are shown in Table 7.

Additional data analyses were conducted to obtain supplementary information regarding the students' perception of the five learning components. Two questions were posted. One was regarding the method for improving existing learning components and the other was overall course recommendation.

Based on response frequency, suggested methods for improving existing learning components were mainly relevant to the career site visit. Suggestions were made for the increased hand-on experience during the visit together with the increased visit frequency so as to cover more sites. Suggestions were also made regarding the increased flexibility of career interview group size (i.e., individual--- rather than group--- interview) so that the students could pursue more areas of interest).

Based on response frequency, course recommendations were made for increased discussion time and invitations of guest speakers. Some of the students reiterated increased frequency of career site visits so as to cover more sites of the class interests.

Discussions

Findings from the current studies attested the benefits of the five learning components designed to aid students' career exploration, based on the empirical evidence provided by Brown and Lent (2005). The self-administered assessments were conducted to aid students' self-exploration based on the notion that individuals with various personal characteristics flourish in different career types (Spokane & Cruza-Guet, 2005). The assessments were perceived by the students as beneficial and relevant. Similar perception was reported for the career interview. The interview was aimed to equip the students with opportunities to vicariously learn about psychology careers of their interests through a narration and observation of selected informants. Students appeared to perceive the relevance and benefit of this vicarious learning (Bandura,

1986). The completion of the integrative analysis, in which the students were required to engage in personal reflection regarding their career decision, their career goals, progress made toward these goals, and ways to enhance such progress, appeared to be similarly well-perceived by the students, both in terms of its benefits and relevance.

An interesting finding emerged regarding the comparative relevance perception of career counseling and career site visit. Whereas findings resonated past reports of the benefits of both learning components (e.g., Brown & Lent, 2005), discrepancies emerged regarding the students' perception of their relevance (i.e., career counseling was perceived as significantly more relevant to the students' career exploration than was career site visit). Potential explanations could be drawn from information obtained from additional data analyses. There, significant concerns were raised regarding the frequency and format of the visit. Whereas the visit site was selected based on the class majority voting, it appeared restricted in responding to some students' needs and was perceived as less relevant. For this reason, recommendations for increased site visits where more career options could be explored were made. Additionally, activities engaged during the visit might not fully respond to students' needs. Apparently, additional hand-on experiences (e.g., opportunities to visit work areas and interact with relevant personnel) would be perceived as more relevant to the career exploration than the lecture-based presentation. Therefore, it is impossible to conclude at this stage whether the compromised relevance perception was due to the limited relevance of the learning component or the unique characteristics of this individual visit.

In addition to the consideration of the aforementioned distinctiveness of the learning components delivered, the unique characteristics of the current "Career in Psychology" course should be taken into consideration prior to finding generalization. These could be considered one of the study limitations. With the current course being designed for an International Program with enrollment from foreign exchange students, compromised knowledge and experiences of the class regarding the practice of psychology within the Thai cultural context is not unanticipated. Additionally, a limited number of responses obtained prevented the use of more sophisticated statistical analyses (i.e., One-way MANOVA) which promises more accurate results. Information obtained, additionally, came from self-reported responses. While confidentiality was reiterated, it could not be viewed as totally free from concerns for social desirability. Lastly, whereas the students' perception was obtained through their rating responses, the rationales for such responses were not obtained.

Research and Teaching Implications

To address the aforementioned limitations, future research studies could consider expanding the scope of data collection to include students from other classes that aid in career exploration, particularly students within the Thai program. Comparisons of the benefits offered by the five learning components as perceived by students from the Thai and International programs would be informative and suggest unique needs of the two groups. Increased sample size would allow the use of more sophisticated data analysis. Additionally, the use of methods other than self-report ratings in evaluating students' perception (e.g., students' attendance check, assignment submission rates) would help validate such ratings. Finally, qualitative data (e.g., interview) would help clarify the rating responses obtained.

Despite the aforementioned limitations of the current study, findings obtained are beneficial for classroom planning and resource management of future courses in Career in Psychology. To begin with, consideration will be made regarding the possibility of increasing the frequency of career site visits so that students of different career interests could perceive their relevance and benefit more from such visits. Caution will be exercised as well to ascertain that the visits are more proportional in terms of hand-on experiences versus lecture-based presentation. Furthermore, increased resources will be given to career counseling. With relatively high perceived relevance and benefits of this learning component, considerations will be made regarding the possibility of increasing the number of counseling sessions offered to the students and to introduce class-activities that help consolidate the benefits obtained. In addition to the personal reflection written assignment, the possibility of engaging the students in post-counseling group discussion will be explored, as long as the students' confidentiality remains well-maintained.

Acknowledgements

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Factors Contributing to Eudaimonic Well-Being:
A Study in the Thai Community Sample

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Abstract

Recently, psychologists have conducted extensive research on positive psychology to determine how to best enhance well-being and a life well-lived. One such attempt was to identify psychological ingredients that contributed to eudaimonic well-being. Such attempts remained very limited in Thailand, however. This research study, hence, aimed to establish relationships that eudaimonic well-being had with mindfulness, lack of acceptance, reappraisal emotion regulation, and suppression emotion regulation. Data were collected from 200 Thai individuals from the community sample, aged 18-68 years. Their mean age was 33.07 ($SD = 9.71$). The participants, who identified themselves as the residents of Thailand, voluntarily participated in this on-line study. Correlational and Multiple Regression Analyses were conducted. Findings demonstrated that, altogether, mindfulness, lack of acceptance, reappraisal emotion regulation, and suppression emotion regulation significantly predicted eudaimonic well-being. Findings were discussed in terms of research and therapeutic implications in eudaimonic well-being enhancement.

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Introduction

Prior to World War II, psychology had the dual aims of treating mental illness and promoting excellence and positive communities. However, after the immense suffering caused by World War II, psychologists recognized the urgent need to repair the psychological damage caused by the war (Wood & Tarrier, 2010). During the last four decades, the field of psychology have shifted their attention to not only "bring[ing] people up from negative eight to zero, but also be[ing] as good at understanding how people raise from zero to positive eight" (Gable & Haidt, 2005). The focus on the positive aspect of psychology has gained its deserved attention.

In recent years, psychologists have conducted extensive research in positive psychology in order to determine how to best define well-being and a life well-lived (Ryan & Deci, 2001; Seligman, 2002). A number of them have focused on eudaimonic well-being as representing positive and desirable quality of the mind. Eudaimonic well-being derives from the notion that ones' quality of life is obtained from the pursuits of their best potentials and their applications of these potentials for the fulfillment of personally expressive self-concordant goals (Waterman, 2008). A number of research studies in Western societies have shown that positive qualities such as mindfulness and acceptance are closely associated with eudaimonic well-being (Shapiro, Schwartz, and Santerre, 2002). On the other hand, eudaimonic well-being is negatively correlated with maladaptive thoughts and emotions (Keyes, 2005). Substantial understandings have accumulated regarding eudaimonic well-being within Western countries.

In Thailand, however, the movement toward positive psychology remains very much in its infancy. Attempts have been made to understand factors contributing to mental health and well-being. However, such attempts still focus mainly on their physical and financial aspects (Meepring, Chien, Gray, & Bressington, 2016). Studies of psychological correlates, however, do not advance at the same pace. A gap remains regarding factors that are associated with eudaimonic well-being of the Thai individuals. The current study, therefore, aims to examine relationships that eudaimonic well-being had with some factors commonly cited in extant literatures contributing to mental health and well-being. These include mindfulness and reappraisal emotion regulation, which existing literature has shown to be positively associated with eudaimonic well-being. At the same time, authors also wanted to explore how lack of acceptance and suppression emotion regulation, which have been shown to be associated with psychological distress, are associated with eudaimonic well-being.

Eudaimonic Well-being

Waterman (2008) described the subjective experience of eudaimonia as the feeling of personal expressiveness. This experience occurs when the individuals act in ways that are consistent with their purpose in life. Such ways, additionally, help enhance their personal potentials. Eudaimonia is associated with a number of factors related to

intrinsic motivation, including self-determination, a balance of challenges and skills, and the investment of considerable efforts (Waterman, Schwartz, & Conti, 2008).

According to Waterman et al. (2010), eudaimonic well-being consists of six interrelated categories, including self-discovery, perceived development of one's best potentials, a sense of purpose and meaning in life, investment of significant efforts in the pursuit of excellence, intense involvement in activities, and enjoyment of the activities. Waterman et al. (2010) suggests that the individuals can identify and develop talents and skills which represent their best potentials and pursue goals that are purposeful and meaningful to their lives. Furthermore, they are capable of recognizing identity choices that are suitable for themselves and that serve as the basis for their personally meaningful commitments. These choices lead to the engagement of activities which produce feelings of personal expressiveness. This process is closely associated with intrinsic motivation because the individuals experience a sense of autonomy and acceptance, which aids in their self-actualization. As a result, the individuals obtain within themselves a sustainable source of motivation and a feeling of well-being.

With the aforementioned importance, eudaimonic well-being has drawn significant research attention within the field of positive psychology (Kasdan, Biswas-Diener & King, 2008). Research studies have shown positive associations that desirable psychological characteristics; namely, mindfulness (Fowers, Mollica, & Procacci, 2010) and reappraisal emotion regulation (Wang, Li, Hu, Dong, & Tao, 2017). On the other end of the spectrum, research efforts have also focused on the relationships that eudaimonic well-being had with factors that led to psychological distress. Waterman et al. (2010) found that well-being was negatively correlated with lack of acceptance (Mazzucchelli & Purcell, 2015) and suppression emotion regulation (Su et al., 2017).

Mindfulness and Eudaimonic Well-being

In addition to eudaimonic well-being, Western psychotherapies have begun to pay significant attention to mindfulness, or the allotment of attention on purpose, in the present moment, and nonjudgmentally, to the unfolding of experience moment-to-moment (Kabat-Zinn, 2003). Western mental health professionals have integrated the practice of mindfulness into mindfulness-based psychotherapies and have made mindfulness training available. These include Mindfulness-Based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Dialectical Behavior Therapy (DBT), and Acceptance and Commitment Therapy (ACT) (Baer & Krietemeyer, 2006).

Nowadays, research studies have proliferated demonstrating the benefits of mindfulness in positive psychology. Wallace and Shapiro (2006) have demonstrated that the practice of mindfulness helps improve cognitive balance by assisting the individuals to become more aware and more accurate in discerning the nature of their bodily sensation, emotions, and thought processes. Furthermore, mindfulness has been shown to decrease psychological distress and increase well-being. Numerous research studies have reported positive associations between mindfulness and positive

psychological outcomes (Jain, Shapiro, Swanick, Roesch, Mills, & Schwartz, 2007; Nyklíček & Kuijpers, 2008). Moreover, Hollis-Walker and Colosimo (2011) conducted cross-sectional and mediation analyses and reported significant positive associations between mindfulness and subjective well-being.

Lack of Acceptance and Eudaimonic Well-being

Psychological acceptance involves the willingness to experience psychological experiences (e.g., thoughts, feelings, memories) without having to avoid them or letting them unduly influence ones' behaviors (Bond et al., 2011). Acceptance has been variously described as allowing, tolerating, embracing, or making contact with ones' experiences. Similarly, Linehan (1993) defines acceptance as an active process of orienting the individuals toward a private experience moment by moment, allowing the experience to be noticed and described without judgment. The author also mentioned that acceptance is an active process that is discovered experientially by each person. The key component of acceptance is letting go of ones' controls but moving towards their valued actions. Acceptance is not a goal in and of itself but is a method of empowering the achievement of life goals. With this, acceptance has been demonstrated to improve psychological well-being by allowing ones to move toward such goals. Acceptance also reduces the disturbance that ones might experience from passing thoughts, feelings, or moods. Hence, acceptance helps cut through a chain of habitual responses and reactions. It provides the individuals with space and time to examine whether their thoughts and feelings are an accurate reflection of reality and reduce experiential avoidance, which has been shown to be associated with a host of negative psychological outcomes (Hayes, Luoma, Bond, Masuda, & Lillis, 2006).

With the aforementioned qualities, research evidences have accumulated suggesting that acceptance is central to psychological well-being and can increase the impact of psychological function with a broad variety of individuals. For example, Sarubbi, Block-Lerner, Moon, and Williams (2012) conducted a cross-sectional analysis using data from 91 Korean-born adoptees and reported that acceptance was significantly and positively correlated with psychological well-being and positive affects. Furthermore, Butler and Ciarrochi (2007) found that acceptance had significant positive correlations with psychological and emotional well-being.

Emotion Regulations and Eudaimonic Well-being

Emotional Regulation is commonly referred to as methods or strategies that the individuals employ to manage their emotions in everyday life (Gross & John, 2003). Various models of emotion regulations have been proposed (e.g., Garnefski and Kraaij's cognitive emotion regulation (2006); Gratz and Roemer's Difficulties in Emotion Regulation (2004). Among these, Gross and John's Emotion Regulation (Gross & John, 2003) is one of the most frequently cited measures and models of emotion regulation. For this reason, this model of emotion regulation will be employed in the current study.

Based on Gross and John's model (Gross & John, 2003), strategies that the individuals employ to regulate their emotions can be broadly categorized into two types: reappraisal and suppression emotional regulation. Reappraisal emotion regulation is a form of antecedent-focused strategies that occur before emotions have been generated. This type of emotion regulation involves the reconsideration or reframing of the interpretations of the situations encountered. Numerous studies have shown cognitive reappraisal to be effective in reducing negative emotional responses (Ochsner & Gross, 2008). Usage of reappraisal emotion regulation leads to an enhanced emotion control, better interpersonal functioning, as well as psychological and physical well-being (Gross & John, 2003; McRae, Jacobs, Ray, John, & Gross, 2012).

The second type of emotion regulation is suppression emotion regulation. This type of regulation can be classified as a response-focused emotion regulation strategy. It entails the inhibition of the expression of ongoing emotions after they have already been generated (Gross & John, 2003). It also reduces the experiences of negative emotions. Frequent usage of suppression has been associated with compromised authenticity, limited psychological and physical health (John & Gross, 2004). Thus, suppression emotion regulation is considered an inferior regulatory style. Suppression emotion regulation has been demonstrated consistently to be negatively associated with psychological well-being in Western cultures (Gross & John, 2003).

Recently, however, extant studies began to emerge suggesting that the association that suppression emotion regulation had with well-being might differ in Eastern non-collectivistic cultures. With cultures prescribing different norms that shape emotion expressions (Kim & Sherman, 2007), emotion suppression has been posited to have its functions in assisting individuals from collectivistic cultures to achieve the goals of accommodating themselves to their circumstances and maintaining relationship harmony. With these functions, emotion suppression was reported to entail no negative consequences in collectivistic cultures (Butler, Lee, & Gross, 2007).

Based on the above literature review, the current study attempts to examine how mindfulness, lack of acceptance, reappraisal emotion regulation and suppression emotion regulation are associated with eudaimonic well-being of the Thai community sample. Findings obtained should help fill gaps in the literature regarding factors relevant to eudaimonic well-being and pave the way for the enhancement of eudaimonic well-being within this sample.

Method

Participants

Participants were 200 Thai individuals (i.e., 138 females, 62 males). Their age ranged from 18-68 years old, with the mean age being 33.07 years ($SD = 9.7$ years). Participants were recruited and volunteered to participate in this on-line study. To be included in the current study, participants had to identify themselves as the residents

of Thailand. Exclusion criteria include previous (i.e., within the six-month time frame) or current treatments of severe psychotic mental disorders.

Measures

The measures used in the current study were translated into Thai following the back translation procedure (Brislin, 1970). In this procedure, a bilingual in English and Thai translated the questionnaires from English to Thai. A second bilingual independently translated the Thai version back into English. The original and back translated questionnaires were then compared. Discrepancies were resolved to refine the translation.

Eudaimonic Well-being. The 21-item Eudemonic Well-Being Scale (Waterman et al., 2010) was used to assess well-being across six domains: self-discovery, perceived development of one's best potentials, a sense of purpose and meaning in life, investment of significant efforts in the pursuit of excellence, intense involvement in activities, and enjoyment of activities as personally expressive. Each item is rated on a five-point scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). The scale yields a total score, with higher scores reflecting higher overall well-being. In the current study, the scale internal consistency was high, $\alpha = .88$.

Mindfulness. The 14-item Freiburg Mindfulness Inventory (Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006) was used to assess mindfulness across four domains: present-moment dis-identifying attention, nonjudgmental toward self and others, openness to negative mind states, and process-oriented or insight understanding. Each item is rated on a four-point scale ranging from 1 (*rarely*) to 4 (*almost always*). The scale yields a total score, with higher scores reflecting higher overall mindfulness. In the current study, the scale internal consistency was high, $\alpha = .89$.

Lack of Acceptance. The 7-item Acceptance and Action-II (Bond, Hayes, Baer, Carpenter, Guenole, Orcutt, Waltz, & Zettle, 2011) was used to measure compromised acceptance. Each item is rated on a seven-point scale ranging from 1 (*never true*) to 7 (*always true*). The scale yields a total score, with higher scores reflecting higher lack of acceptance. In the current study, the scale internal consistency was high, $\alpha = .90$.

Emotion Regulation. The 10-item Emotion Regulation Questionnaire (Gross & John, 2003) was used to measure two types of emotions regulations: reappraisal (6 items) and suppression (4 items). Each item is rated on a seven-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The scale yields a total score, with higher scores reflecting higher usage of each type of emotion regulation. In the current study, the scale internal consistency was high, $\alpha = .91$, for reappraisal emotion regulation, and fair, $\alpha = .66$, for suppression emotion regulation.

Procedure

Data collection procedure commenced after an approval had been given by the Institutional Review Board. After providing a voluntary consent to participate in the current study, participants responded to screening questions (i.e., Thai residency and not currently or previously receiving treatments of severe psychotic mental disorders). Only those fulfilling these screening criteria became eligible for study participation. Then, participants responded to on-line questionnaires assessing eudaimonic well-being, mindfulness, lack of acceptance, reappraisal emotion regulation, and suppression emotional regulation for approximately 15 minutes.

Data Analysis

To investigate the relationships among eudaimonic well-being, mindfulness, lack of acceptance, reappraisal emotional regulation, and suppression emotional regulation, Statistical Package for Social Science (SPSS) version 21 was employed.

Descriptive statistics were engaged to explain participants' demographic information and to delineate key study variables. Then, inferential statistics were engaged. Relationships that eudaimonic well-being had with mindfulness, acceptance, reappraisal emotion regulation, and suppression emotion regulation were examined using Pearson's product-moment correlation analysis. Then, a multiple regression analysis with an enter method was used to analyze how mindfulness, acceptance, reappraisal emotion regulation, and suppression emotion regulation predicted eudaimonic well-being.

Results

The means, standard deviations, and correlations of all study variables are displayed in Table 1. As shown, eudaimonic well-being was positively and significantly correlated with mindfulness ($r = .646$, $p < 0.01$) and reappraisal emotion regulation ($r = .457$, $p < 0.01$). Findings also showed that eudaimonic well-being was negatively and significantly correlated with lack of acceptance ($r = -.494$, $p < 0.01$). However, the relationship between eudaimonic well-being and suppression emotion regulation was not significant.

Table 1 Descriptive Statistics and Correlations between Study Variables ($N = 200$), reliability was shown in parentheses

Variables	1	2	3	4	5
1) Eudaimonic Well-Being	(.88)	.646**	-.494**	.457**	-.071
2) Mindfulness	.646**	(.89)	-.455**	.579**	.083
3) Lack of Acceptance	-.494**	-.455**	(.90)	-.257**	.199**
4) Appraisal Emotion Regulation	.457**	.482**	-.257**	(.91)	.262**
5) Suppression Emotion Regulation	-.071	. 083	.199**	.262**	(.66)
M	56.30	40.96	23.31	32.65	16.82
SD	12.33	7.92	10.30	7.10	4.80
Min - Max	17 - 79	19 - 56	7-49	6 - 42	4 – 28
Possible score	0 - 84	14 - 56	7-49	6 - 42	4 – 28

** $p < .01$

Table 2 Outcomes of Multiple Regression Analysis and Assumption Testing

Variables	b	SEB	β	Co-linearity Statistic	
				Tolerance	VIF
Mindfulness	0.78	0.11	0.46***	0.65	1.55
Lack of Acceptance	-0.24	0.07	-0.20***	0.73	1.38
Reappraisal Emotion Regulation	0.34	0.10	0.22***	0.71	1.41
Suppression Emotion Regulation	-0.32	0.14	-0.13*	0.85	1.18
Constant	23.34	5.15			

$R^2 = 0.505***$, $F = 49.80***$
*$p < .05$, ***$p < .001$

Prior to conducting a multiple regression analysis, multicollinearity assumption was checked. As shown in Table 2, correlational coefficients between all predictor variables were not higher than .90. Also, all tolerance values were greater than 1 and variance inflation factor (VIF) did not exceed 10 (Hair, Black, Babin, & Anderson, 2010). Hence, Multiple Regression Analysis was conducted, using an Enter method. As shown in Table 2, altogether, the four independent variables significantly predicted eudaimonic well-being ($F = 49.80$, $p < .001$) and accounted for approximately 50.50% of its variance ($R^2 = .505$, $p < .001$). When examining the

standardized coefficients of these predictors, all of the four variables contributed significantly to the prediction of eudaimonic well-being (i.e., $\beta = 0.46$, $p < .001$, for mindfulness; $\beta = -0.20$, $p < .001$, for lack of acceptance; $\beta = 0.22$, $p < .001$, for reappraisal emotion regulation; and $\beta = -0.13$, $p < .05$, for suppression emotion regulation, respectively).

Discussion

The present study pioneered the investigations of the relationships that eudaimonic well-being had with mindfulness, lack of acceptance, reappraisal emotion regulation, and suppression emotion regulation in the Thai community sample. Results demonstrated that eudaimonic well-being was positively and significantly correlated with mindfulness and reappraisal emotion regulation. While eudaimonic well-being was negatively and significantly correlated with lack of acceptance, its association with suppression emotion regulation was not significant. Altogether, mindfulness, lack of acceptance, reappraisal emotion regulation, and suppression emotion regulation significantly predicted eudaimonic well-being and accounted for 50.50% of its variance.

Overall, the current findings resonated well existing empirical findings regarding the relationships that eudaimonic well-being had with mindfulness, lack of acceptance, and reappraisal emotion regulation. To begin with mindfulness, the positive association that this psychological construct had with eudaimonic well-being was well supported by past literature (e.g., Howell, Dopko, Passmore, & Buro, 2011; Iani, Lauriola, Cafaro, & Didonna, 2017). In the current study, mindfulness was indeed the strongest predictor of eudaimonic well-being, when compared with lack of acceptance and the two types of emotion regulation. The association that mindfulness had with eudaimonic well-being might be viewed in terms of its qualities in assisting the individuals to become more aware of their internal experiences. Such awareness is likely to support the individuals' self-exploration and self-discovery and enhance their concentration during their potential development. Mindfulness, hence, was positively associated with eudaimonic well-being.

A negative association was found between lack of acceptance and eudaimonic well-being; and the former was shown to predict the well-being negatively. Current findings support previous studies where acceptance had positive association with psychological well-being (Butler & Ciarrochi, 2007). With the non-judgmental stance that the individuals take toward their internal experiences, self-exploration which is essential for eudaimonic well-being is likely to be attained. In contrast, lack of acceptance is likely to lead to the opposite outcomes. Restriction in self-exploration is likely, rendering the degree to which the individuals would move toward the directions of their best potentials, compromising their sense of purposes or life meaning (Schlegel, Hicks, Arndt, & King, 2009). This potentially compromised their eudaimonic well-being.

In terms of reappraisal emotion regulation, findings from the current study help demonstrate that this type of emotion regulation was positively associated with

eudaimonic well-being; and the construct contributed to the variance in the well-being. The reconsideration or reframing of an emotional event, characteristic of reappraisal emotion regulation, is likely to assist the individuals to better manage negative emotional experiences and reduce the degree to which such experiences could interfere with their goal pursuits and levels of fulfillment in which they would obtain subsequently (Ochsner & Gross, 2008).

Findings regarding suppression emotion regulation are worth considerations in various aspects. To begin with, whereas correlational analysis indicated that suppression emotion regulation was not significantly associated with eudaimonic well-being; it significantly and negatively predicted the well-being, when examined simultaneously with mindfulness, lack of acceptance, and reappraisal emotion regulation. The suppression effect (Pandey & Elliot, 2010) could be a factor and is worth further examination. Additionally, based on the regression analysis, current findings resonated past reports from Western literature that demonstrated negative consequences of suppression emotion regulation on adjustment and well-being (Gross & John, 2003). It is possible that eudaimonic well-being is relatively individualistic in nature (e.g., entailing self-determination, pursuits of personal goals and strivings, and focusing on personal expressiveness). Hence, the current findings open the possibility that the nature of the well-being (e.g., individually- or socially-oriented ones) should be considered in the examination of the outcomes of suppression emotion regulation.

Contributions and Implications

Current findings help fill out the gaps in research endeavors in eudaimonic well-being within the Thai community sample in various aspects. To begin with, findings help demonstrate associations that the well-being had with various psychological factors, shown to be significant and relevant in Western literature. Additionally, findings regarding the association that suppression emotion regulation had with eudaimonic well-being help raise questions for further examinations on the topic. One such question is regarding the mechanism in which this type of emotion regulation operates within the relatively individualistic domain of eudaimon well-being.

Therapeutic implications could be drawn as well from the current findings. Whereas mindfulness appeared to be particularly beneficial to eudaimonic well-being, the roles of compromised acceptance and the two types of emotion regulation (i.e., reappraisal and suppression) should not be overlooked in eudaimonic well-being enhancement. The strengths of the associations that each study variable had with eudaimonic well-being should inform their prioritization within the therapeutic plan for such enhancement .

Limitations and Future Directions

Despite the aforementioned contributions, the current study entails limitations that worth considerations. First, data collection was conducted with self-report measures. Influences of social desirability cannot be totally ruled out, despite preventative measures (e.g., informing participants about the benefits of genuine responses and ascertaining them that these responses would be kept confidential). Secondly, this study had a cross-sectional design. This, together with the use of correlational and regression data analyses, prevented inferences of causal relationships among study variables. In the future, experimental or longitudinal research designs could be employed. Lastly, as previously mentioned, the possible suppressor effect of suppression emotion regulation and its negative consequences on eudaimonic well-being within the Thai collectivistic culture warrant further investigations.

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How Tapping Affects Talking: Reversals of Action-language Interaction Effects

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Abstract

A growing body of research shows that there is a close functional connection between motor and language systems of the human brain. Behavioural and TMS investigations document a causal influence between language and motor systems, an influence that is bidirectional and which can be facilitatory or inhibitatory. While it is still not fully clear what determines the sign of the interaction effect (inhibition or facilitation) between action and language, some factors have shown to have an influence on the sign of the effect. A few studies have even managed to successfully reverse the sign of the effect between language and motor processes. This paper provides a short review of these reversals of action-language effects and discusses how this flexibility of motor-language interaction may be explained.

Keywords: Action-language interaction, Motor movement, Action word, Semantics, Working memory

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Introduction

A great deal of interest and debate has recently revolved around the interaction of language and action systems of the brain. Numerous behavioural and transcranial magnetic stimulation (TMS) investigations have examined the effect of motor systems activity on the processing of action-related language as well as effects in the reverse direction, from language processes on motor performance. Findings from these studies demonstrate that motor systems activity modulates the processing of action-related language (e.g., D'Ausilio et al., 2009; Glenberg & Kaschak, 2002; Glenberg et al., 2008; Repetto et al., 2013; Shebani & Pulvermüller, 2013, 2018; Willems et al., 2011) and that action language processing affects motor behaviour or excitability (Boulenger et al., 2006; Buccino et al., 2005; Dalla Volta et al., 2009; de Vega et al., 2013; Fadiga et al., 2002; Gianelli & Dalla Volta, 2015; Liepelt et al., 2012; Sato et al., 2008). Some of these investigations document a negative and inhibitory causal influence between language and motor function, while others show a positive and facilitatory effect. TMS and action interference experiments focussing on body-part specific action words (i.e. words referring to actions performed with either the arms or legs such as *grasp* and *kick*) have demonstrated a functional connection between these subtypes of action words and their corresponding arm or leg representation of the motor cortex (for example see, Gianelli & Dalla Volta, 2015; Mirabella et al., 2012; Pulvermüller et al., 2005; Repetto et al., 2013; Shebani & Pulvermüller, 2013; Vukovik et al., 2017; Willems et al., 2011). These results suggest a close, functionally specific and sophisticated link between language and cortical motor systems that is dependent on the meaning of action-related language. Alternatives to this embodied approach downplay these causal effects, highlighting the role of amodal conceptual representations (see Mahon & Hickok, 2016). However, the idea of such amodal conceptual hubs is not incompatible with a meaning dependent role of sensorimotor systems in language processing, as mentioned in previous studies (Pulvermüller et al., 2010; Pulvermüller et al., 2014; Shebani et al., 2017).

The fact that some studies found inhibition effects while others found facilitation effects raises the question of what factors determine the sign of the causal influence between motor and language processes and whether the sign of the interaction effect can be reversed. Recently, a few studies looking at action-language effects have found that the sign can be reversed. This paper reviews these studies and briefly discusses these flexibility effects.

A matter of linguistic task?

A number of factors appear to determine whether the sign of action-language interaction is facilitatory or inhibitory. Some authors have suggested that the sign of the interaction between action-related language and motor responses depends on the type of linguistic task used (Mirabella et al., 2012). In a semantic task, they found an interference effect when subjects performed a reaching movement with their hand in response to arm-related action words, but when the same task was performed using non-linguistic cues, the interference effect diminished. Mirabella and colleagues point out that, in previous experiments, tasks involving understanding the meaning of an

action word or semantically processing an action-related sentence lead to interference effects, whereas lexical tasks not requiring semantic judgements did not (e.g., Buccino et al., 2005; Sato et al., 2008). However, the choice of linguistic task (semantic vs. non-semantic) as a key determiner of the sign of the effect does not account for some results which found facilitation effects even in tasks requiring semantic processing (Kaschak et al., 2005; Pulvermüller et al., 2005). For example, in examining the effect of movement perception on the processing of movement sentences, Kaschak et al. (2005) found interference effects in a non-semantic language task as well as in a semantic judgement task. They found that shared content between motion sentences and movement perception lead to slower responses and concluded that the sign of the effect depends on the integratibility of action language content and movement perception.

A matter of timing

Boulenger and colleagues were the first to examine whether the temporal relationship between motor and linguistic processes influences the sign of action language effects (2006). They measured arm movement kinematics of a grasping action while subjects performed a language task and found that when action words were processed prior to the onset of the action, it facilitated the grasping movement. On the other hand, when action words were processed during the execution of the grasping movement, it interfered with it. Manipulating the timing of action word presentation in relation to the grasping movement lead to a complete reversal of the sign of the effect from facilitation to inhibition. A study involving the processing of transfer sentences found similar results (de Vega et al., 2013). Subjects read sentences describing towards or away actions and performed a motor movement either towards or way from themselves to press a button. The motor movement either matched or mismatched the direction of the transfer. Results showed that, for matching conditions, when there was a shorter interval between action language processing and the cue for motor movement (SOAs 100 and 200ms), it slowed the motor response. However, with a longer interval (SOA 350ms) between the two tasks, motor movement was facilitated. As the same verbal stimuli and task demands were involved and only the temporal overlapping of semantic language processing and action was manipulated, this result suggests that it is the timing of action-language interaction that determined the sign of the causal effect.

The reversal of the pattern of interaction as a function of the temporal relation between motor and language tasks in de Vega et al. (2013) parallels the results reported in Boulenger et al. (2006). In both studies, priming of motor movement occurred when there was a longer interval between language and motor tasks, while interference occurred when the two tasks were performed concurrently or within a short interval of each other. Their results demonstrate that action word processing can assist or interfere with motor behaviour depending on relative timing of motor and language processes.

A matter of movement type

A recent study by Shebani and Pulvermüller (2018) investigated the possibility that the type of motor movement influences the sign of the interaction effect. In an earlier experiment by the same authors (Shebani & Pulvermüller, 2013), subjects were required to keep short lists of arm- and leg-related action words in working memory while performing complex, sequential movements with their hands and feet. Subjects had to perform a motor sequence known as a drumming exercise called the single paradiddle (RLRRLRLL, etc.). This already difficult motor task was made additionally challenging by requiring subjects to tap the pattern at their "frequency limit", or the highest beat frequency they could maintain without making errors. This complex and demanding motor task performed in conjunction with the action word memory task lead to an impairment of working memory for concordant arm- and leg-related action words; Subjects made more errors on arm-related word when performing the complex motor movements with their hands and more errors on leg-related words when performing the movements with their feet. The results demonstrate that motor systems of the brain can exert an inhibitory effect on action word memory.

The impairment of action word memory as a result of complex motor movement in Shebani and Pulvermüller (2013) lead to the question of whether motor systems can also have a facilitatory effect on action word memory if changes were made to the type of motor movement. Using the same working memory paradigm as in Shebani and Pulvermüller (2013), the authors carried out the same experiment but with a different motor task this time: simple finger alterations (Shebani & Pulvermüller, 2018). Instead of a complex drumming exercise, subjects were required to simply tap their fingers or tap their feet while keeping the lists of action words in memory. Interestingly, changing the motor sequence from a complex and demanding one to a very simple one resulted in a reversal of the interaction effect for arm-related action words. Instead of interfering with action word processing, the simple finger tapping assisted memory for arm-related words and subjects made relatively fewer errors on arm words when performing the simple repetitive movement with their hands. This enhancement of arm word memory as a result of simple finger alterations demonstrates that the sign of the functional interaction between language and motor systems can be altered by changing movement type. A similar enhancement of leg word memory as a result of foot tapping was not found in the study, possibly due to the foot movements used in the experiment being too similar to walking, a highly automatized motor activity that may require little cortical activity.

To further scrutinize these reversal effects, Shebani and Pulvermüller (2018) compared the results of the two experiments (complex vs. simple movements). A 2 x 2 x 2 ANOVA with the factors Word Category, Motor Movement and Task Complexity revealed a significant three-way interaction effect, indicating the reversal of the effect of motor movement on arm word memory when simple finger tapping was performed instead of the complex motor sequence. Further inter-experimental analyses reported in Shebani and Pulvermüller (2018) confirmed this finding. Focussing on the hand movement conditions of both experiments, analyses showed a

significant cross-over Word Category x Task Complexity interaction, a significant word category difference in the simple motor task and a near significant difference in the complex motor task. A similar interaction was not found in an analysis of only the foot movement conditions (see Figure 1).
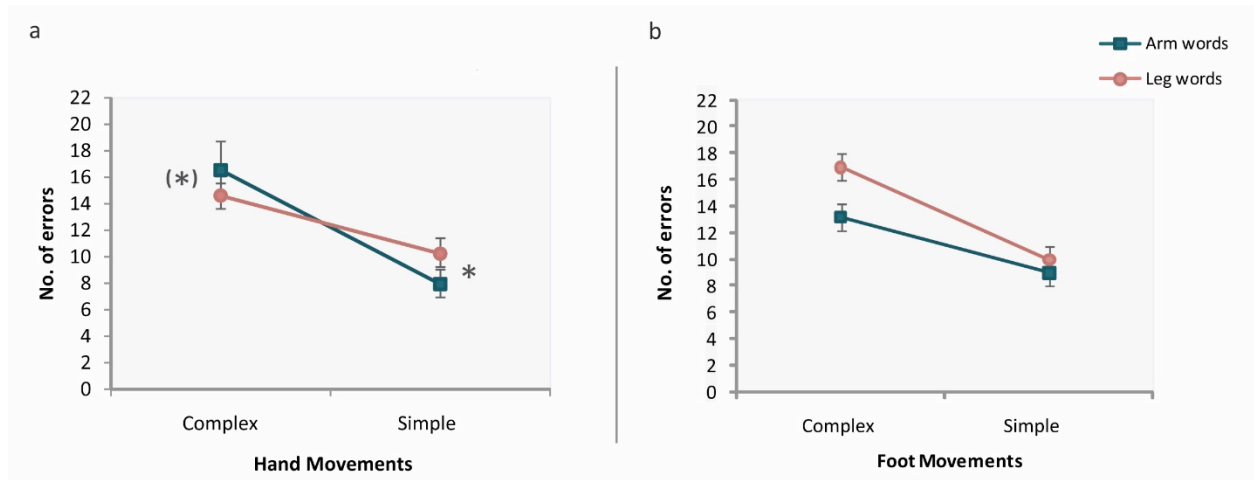
Figure 1: (a) Cross-over word category x task complexity interaction in the hand movement conditions. (b) word category x task complexity interaction in the foot movement conditions. From Shebani and Pulvermüller (2018, their figure 3).

A final inter-experimental analysis with the factors Motor Movement and Task Complexity on data from both hand and foot movement conditions for only arm-related words also revealed a significant interaction effect. As documented by these statistically significant interactions and word category differences, their results show that simple finger tapping enhanced working memory for arm-related words. As the two experiments used the same paradigm and word stimuli, changing only the motor task, the results and analyses in Shebani and Pulvermüller (2018) provide clear evidence that changing the complexity of motor movement can reverse the sign of the effect of motor movement on action word memory from inhibition to facilitation.

Discussion

While different features have been attributed to the reversal of the sign in studies of action-language interaction, there is some similarity in the explanations provided regarding the effects observed. In both studies that found relative timing of language-motor processes to alter the sign of the effect (Boulenger et al., 2006; de Vega et al., 2013), the authors concluded that the interference effects may be a result of competition between motor movement and action language processing for common neural resources, since both motor and language tasks were performed concurrently (Boulenger et al., 2006) or within very close temporal range of each other (de Vega et al., 2013). The impairment of arm- and leg-word memory as a result of complex motor movement described in Shebani and Pulvermüller (2013) also fits with this interpretation. Based on the semantic somatotopy model (Pulvermüller, 2001, 2005) which sees motor systems and language as sharing overlapping neuronal representations, Shebani and Pulvermüller (2013) explain that, as retaining lists of

action words in memory and performing a complex motor sequence are two demanding tasks involving motor schemes that are incompatible with each other, competition for common processing resources results in local inhibition between overlapping and adjacent memory and motor circuits and, thus, interference effects. The interference effect of movement perception on motion sentence processing observed in Kaschak et al. (2005) is also explained along similar lines. Kaschak and colleagues interpret their finding as both tasks drawing on the same processing mechanisms, resulting in comprehension difficulty and the slower responses found.

With regards to facilitation effects, on the other hand, one explanation put forth relates to motor resonance and simulation. According to de Vega et al. (2013), two types of resonance phenomena may exist, an early onset and fast-fading motor resonance that causes interference, and a sentence-level motor resonance that is longer lasting and leads to facilitation. de Vega and colleagues posit that when there is a longer interval between action word processing and motor movement, early onset motor resonance related to processing the action-related language would have subsided by the time motor movement was executed, thereby, not causing any competition and, thus, interference between motor and language tasks. However, a longer lasting resonance may prime the subsequent motor movement leading to facilitation effects, as observed in their experiment when there was a longer interval between motor movement and action language processing. While the motor resonance hypothesis can account for results manipulating the timing of motor and language tasks, it does not explain reversals of the interaction effect when other features, such as movement type, are manipulated.

In Shebani and Pulvermüller (2018), an explanation for the complete reversal of the sign from interference to facilitation is given based on the semantic somatotopy model (Pulvermüller, 2001, 2005). According to this framework, if one motor programme fits into and forms part of a more complex motor programme, then the activation of the simpler motor programme may also co-activate the more complex one to a degree. The slight activation of the more complex motor programme may result in priming effects. As explained in Shebani and Pulvermüller (2018), the facilitation effects observed when simple motor movements were combined with action word memory may have arisen from the simple finger tapping pre-activating memory circuits within the motor network, thereby, facilitating memory for action-related words. As mentioned in Shebani and Pulvermüller (2018), this explanation can also account for the results of studies manipulating the temporal relation between motor and linguistic tasks. In both Boulenger et al. (2006) and de Vega et al. (2013), the facilitation effects found may have been due to the pre-activation of relevant motor circuits by the action language stimuli preceding the motor movement. This activation may have primed the reaching movement, leading to the faster motor responses reported in both studies.

Conclusion

Different features have been suggested as having an influence on whether action-language interactions lead to facilitation or inhibition effects. Factors shown to reverse the sign of the interaction effect include relative timing of motor and linguistic processes and the type of motor movement (simple vs. complex) performed in conjunction with action language processing. Explanations put forth for these flexibility effects have been briefly discussed. Future research may further explain the flexibility of the interaction between action and language and uncover additional features that can lead to reversals of language-interaction effects.

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Relationships among Rumination, Mindfulness, Acceptance and Depression in Thai University Students

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Abstract

In Thailand, depressions and suicide attempts has been increasingly founded in Thai university students. Many causes are indicated such as interpersonal problems, stress from study and intrapersonal thinking styles. However, there are some protective factors in human characteristics which could be protective factors for the incidence of psychological problems. This study aimed to explore the relationships that rumination, mindfulness and acceptance had with depression. Data were collected via questionnaire from two hundred and twenty-five undergraduate students and analyzed using multiple regression analysis. Results indicated that all of these variables significantly predicted depression with the overall model fit (R^2) being 0.34. The rumination was significantly associated with depression ($B = .142$, $p < .05$). Other protective factors, mindfulness and acceptance, were also significant predictors ($B = -.195$, $p < .05$; $B = .397$, $p < .001$ respectively)

Keywords: Mindfulness, Rumination, Acceptance and Depression

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Introduction

Depression was recognized as one of the most global public health concerns causing serious problems in every aspect of people's lives across the world (WHO, 2012).In 2001 WHO expected that in 2020 depressive symptom could be the second major issues in public health domain. Likewise, mental health issues including depression and anxiety are also significant problem found among many university students causing both academic and personal problems (Mackenzie, Wiegel, Mundt et al., 2011; Blanco et al., 2008). Moreover, there are an increasingly prevalence of depression and suicidal ideation on universities' students (Eisenberg, Gollust, Golberstein & Hefner, 2007). As in Thailand, the department of mental health reported that approximately 33% of Thai adolescents aged between 10- 19 year-old were at risk to become depressed (Department of Mental Health, 2017).

The situational causes of depression in college students were identified including grade problems, interpersonal relationships, and financial issues. The feeling of hopelessness, loneliness and helplessness were found to be the contributing factors in college students (Furr, Westefeld, McConnell, & Jerkins, 2001). In Thai University especially with higher competition, students might experience mental health problems because of conflicts with family, friends and partners, financial issues and academic problems (Assawarungnirun & Wangwiwatjarern , 1993; Rukkhajeekul, 2013)

However, situations were not often the cause of mental health issues but the way people perceive or think about significantly influence or determine our emotional and behavioral consequences (Center for Clinical Intervention, 2008)

Rumination was defined by Nolen-Hoeksema, Wico & Lyubomirsky (2008) as the process of perseverative thinking about or focusing on the owner's feelings or problems' causes or consequences, not the specific thought. Literature review in rumination reported that it is one of the factors that had unique relationship with distress especially depression (Nolen-Hoeksema et al., 2008). This common style of thinking was a response to stressor or problem in people' s lives that could take part in making thinking more pessimistic about past, present or the future.(Watkins, 2010; Morrison & O'Connor, 2005). Besides, when people spend times on rumination, it could impair the active problem solving (Cribb, Moulds, & Carter, 2006) Besides, It can deteriorate the ruminator' social support which eventually worsen the depression. In college students, high rumination was also found to be the predictor of depression since entering to college (Nolen-Hoeksema & Morrow, 1991) and the prediction of the onset of depression in even healthy teenagers (Wilkinson, Croudace & Goodyer, 2013).

When people experienced painful and uncomfortable their private experiences for instance thoughts, feelings, sensations, and memories, they often have a proclivity to avoid or disconnect these inner experiences. This phenomenon is called experiential avoidance (Hayes, Strosahl, Wilson et al., 1996).The outcome of denying unpleasant emotions or cognition is the internal conflicts or stagnation within the self (Crane, 2009). Moreover, when people change the pattern and frequency of these unpleasant experiences by control or suppression which can paradoxically increase the emotions or thoughts. Researchers also found that higher levels of experiential avoidance were

correlated with higher level of psychological issues such as depression, anxiety, and fear and negatively correlated with quality of life (Hayes, Strosahl, Wilson et al., 2004)

In order to deal with experiential avoidance effectively, modern cognitive behavior therapies nowadays such as Acceptance and commitment therapy (ACT) are more interested in considering negative affect as the important part of experience (Neimeyer, 1993) and accepting them even these may seem painful instead of controlling (Crane, 2009). Acceptance thoughts and emotions could be associated with mindfulness which rooted from Buddhism about the awareness and unconditional acceptance of present moment experiences (Kabat Zinn, 2003)

Disseminated to both eastern and western psychology, a concept of mindfulness consisted of two enhanced state of attention and awareness in here-and-now or present-moment experiences (Brown & Ryan, 2003). Normally, people' mind can absorb in the past, worry and fantasize about the future or ruminate which divide our attention or awareness in present. (Deyo, Wilson, Ong, & Koopman, 2009) Training mindfulness with using five senses to observe and aware the flow of thoughts and mind without rejecting or holding it (Bauer-Wu, 2011). This can gently bring our mind back and help people being aware and be awake fully to their here-and-now lives. (Deyo et al, 2009)

Mindfulness has been utilized in plethora of health researches and training especially in cognitive behavior therapy. A systematic review informed that mindfulness had association with not only psychological disorders including depression and anxiety but also health issues (Park, Reilly-Spong & Gross, 2013) In Thai adolescents, mindfulness had negative correlation with psychological distress (depression, anxiety, stress) and also regret (Pattananarongkorn, Padungsatayawong, Cherdchoochart, Jarukasemthavee & Pisitsungkagarn, 2014; Chulpaiboon, Srisawad, Limsakdakul & Taephant, 2016)

In Thailand there are a few researches that explore the relationship of depression and other aforementioned variables separately (e.g., mindfulness, rumination) (Pattananarongkorn, et al., 2014; Chulpaiboon, et al., 2016). In order to provide a wider picture of depression issues in Thai college students, the current research aim to initially examine the relationship of rumination, experiential avoidance/acceptance, mindfulness and depression. Accordingly, the main hypothesis examined whether the rumination, mindfulness and experiential avoidance/acceptance would predict depression.

Methodology

Participants and Procedures

Participants were two hundred twenty five undergraduate students who were informed of confidentiality and voluntary took part in this study. The age of participants ranged from 18 to 25 year-old with the mean age of 20.63 ($SD = 1.13$). Of these participants, one hundred forty five were female (64.4%) and eighty (35.6 %) were male students which were all recruited from Thai public university in Bangkok Metropolitan Area. After voluntary participation, a package of measures including demographical data,

rumination, mindfulness, experiential avoidance and depression were completed (duration about 15 minutes) and then collected for further statistical analyses.

Instruments

Depression. The Depression Anxiety Stress Scale (DASS-42; Lovibond & Lovibond, 1995) is a 42-item self-reports which measure the negative emotional states of depression, anxiety and stress. In this study, only 14 items from depression subscale were solely used to assess level of hopelessness, devaluation of life lack of interest, inertia etc. Respondents indicated on a Likert scale from 0 (never) to 3 (almost always) the degree to which they experienced these depressed mood over the previous week. Depression subscale had demonstrated excellent internal consistency across (Cronbach's α = .91; Lovibond & Lovibond, 1995) In Thailand, DASS-42 was translated in Thai and used in both clinical and nonclinical populations with good internal consistency in depression subscales (α = .89) (Webster, Hawley, & Lopez, 2013).

Rumination. The Rumination-Reflection Questionnaire (RRQ; Trapnell & Campbell, 1999) was assessed the increased attention of ourselves motivated by threats perceptions, losses or unfairness to the self. There are 2 subscales in RRQ including rumination and reflection. Only rumination subscale was used in this study which consists of 12 items rated the degree of agreement from 1 (strongly disagree) to 5 (Strongly agree) (e.g. "Sometimes it is hard for me to shut off thoughts about myself."). This scale yielded good internal consistency (Cronbach's α = .88) with adequate convergent validity (Deyo, Wilson, Ong, & Koopman, 2009).

Experiential Avoidance/ Acceptance. Acceptance was measured by the Acceptance and Action Questionnaire-II (AAQ-II; Bond, Hayes, Baer et al., 2011) which was the developed version of AAQ-I (Hayes, Strosahl, Wilson et al., 2004). Generated by ACT therapist, this 7-item with each item has 7 Likert scale measures experiential avoidance or psychological inflexibity which are clarified as the avoidance or control of thoughts and feelings which prevent people to pursue their goals or values (e.g. Worries get in the way of my success / Emotions cause problems in my life) Higher scores indicates higher level of psychological inflexibity or lower in psychological flexibility. Good internal consistency was found with Cronbach's α is .84 and the test-retest reliability is also good with .79 over 12 month (Bond et al, 2011)

Mindfulness. The Freiburg Mindfulness Inventory (FMI; Walach, Buchheld, Buttenmuller, Klienknecht, & Schmidt, 2006) measured participants' personal experiences of mindfulness (e.g. "I am open to the experience of the present moment". The form consists of 14 items rated from 1 (rarely) to 4 (Almost always). After recoding revered items, the total of mindfulness score was summed and then averaged. FMI short form possess good Internal consistency (α = .86)

Results

Statistical Analysis

SPSS for Windows was used to analyze Means (*M*), standard deviations (*SD*) and alpha coefficients for all four questionnaire measures. Correlational analyses were

also conducted to explore the association between experiential avoidance/acceptance, rumination, mindfulness and depression (Table1). In addition, multiple regression (MRA) was then performed to explore the prediction of depression by mindfulness, experiential avoidance and mindfulness.

Table 1. *Mean, standard deviation, alpha coefficients and correlations between Mindfulness, Experiential avoidance, Mindfulness and Depression measures* (N = 225)

	M	*SD*	1	2	3	4
1. FMI	41.33	5.63	(.76)	-	-	-
2. RRS	39.42	8.91	-.339	(.88)	-	-
3. AAQ-II	27.95	9.41	-.435**	.545**	(.85)	-
4. DASS-42 (Depression)	12.34	8.85	-.356**	.415**	.554**	(.92)

Note: FMI = Freiburg Mindfulness Inventory, RRS = Ruminative Response Scale
        AAQ-II = the Acceptance and Action Questionnaire-II,
        DASS-42 = Depression Anxiety Stress Scale, **p< .01

As shown in Table 1, mindfulness was found to have negative correlation with experiential avoidance and rumination significantly ($p < .01$). Also, rumination scores were statistically correlated with experiential avoidance ($p < .01$). For depression, scores were statistically significant negatively with mindfulness ($r = -.356$, $p < .01$) and positively with experiential avoidance/acceptance ($r = .554$, $p < .01$) and rumination ($r = .415$, $p < .01$)

To carry out multiple regression appropriately, multicollinearity was checked. As in table 2, the correlational coefficients between all predictor variables were not higher than .90. Also, all tolerance values were greater than .1 and variance inflation factor (VIF) did not exceed 10 (Hair, Black, Babin, & Anderson, 2010). Hence, multiple regression was calculated to predict depression as the dependent variable based on rumination, mindfulness and experiential avoidance as illustrated in Table 2.

Table 2. *Coefficients variables to predict depression resulting from multiple regression*

	T	Unstandardized Coefficients		Standardized coefficients
		B	*SE*	β
Constant	.687	3.7	5.39	
Mindfulness (FMI)	-2.02*	-.195	.096	-.124
Rumination (RRS)	2.17*	.142	.065	.143
Experiential avoidance /Acceptance (AAQ-II)	6.13***	.397	.065	.422
R^2		.337		
Adjusted R^2		.328		

Note: *$p < .05$, ***$p < .001$

A significant regression equation was found ($F(3, 21) = 37.49$, $p < .001$) and the result of the regression indicated the three predictor explained 33.7 % of the variance (R^2 = .337) As shown in Table 2, It was found that the mindfulness negatively predicted depressive tendencies (β = -.124, $p < .05$). Also, rumination (β = .143, $p < .05$) and

experiential avoidance were significant predictors of depression in which experiential avoidance or AAQ-II made the most contribution significantly compared with other predictors ($\beta = .422$, $p < .001$) Thus, the college students' predicted depression scores are equal to 3.7 + .397 (Experiential avoidance) + .142 (Rumination) − .194 (Mindfulness)

Discussion

The objective of this study was to initially examine the association between mindfulness, experiential avoidance/acceptance, rumination and depression in Thai college students. Result was found that college students who possessed a high level of rumination also had tendencies to avoid or control their emotions and with lower level of mindfulness. As hypothesized, these 3 variables including mindfulness, rumination and experiential avoidance/acceptance can predict students' depressed mood.

Similarly with previous findings which indicated that ruminative thought predicted depression (Nolen-Hoeksema & Marrow, 1991) It could be explained that rumination induce more negative thought about the past, the present, or the future which may exacerbate depression (Nolen-Hoeksema & Morrow, 1991. Even though, they could create good solutions when encountered with problems in life, ruminators were less confident and likelihood to implement their actions plans (Nolen-Hoeksema, Wisco & Lyubomirsky, 2008).

Also, there is association between rumination and avoidance which only few study explore relationships. Only a study by Cribb et al (2006) supported and explained that rumination might serve as the emotional avoidance. When people ruminated about the causes and consequences of problems, their emotional responses were then not activated. As expected college students who had tendency to ruminate also reported high depressed moods. (Cribb et al, 2006)

Second, the predictor of depressive moods discussed in this study was mindfulness. The finding was consistent with previous evidences that psychological distress could be treated through mindfulness training (Park, Reilly-Spong and Gross, 2013). Pattananarongkorn, et al. (2014) indicated that those who were less mindful tend to had high psychological distress. Though the mechanisms beneath the benefits of mindfulness still not fully explained, the plausible explanation was that this training could reduce rumination process (Kiken & Shook, 2014; Deyo, Wilson, Ong et al., 2009) Hence, the mindfulness was found having negative correlation with rumination in the present study.

Besides, acceptance which is the opposite of avoidance was defined as the willingness to experience and refuse to change or control unwanted private events (Crane, 2009). It might relate to one of the mindfulness components which were the acceptance of present-moment experiences without judgements even it was painful (Kabat-Zin, 2003) It might be explained in this study that those who were mindful, have accepted more about their here and now experiences.

Another interesting and the most contributed predictor, experiential avoidance was found to have association with depression and other quality of life which was coherent with research from Hayes, Strosahl, Wilson et al.(2004). However, theories

that could explain the mechanism of these relationships remain speculative. Cribb et al. (2006) suggested that encountering with the feelings or emotions could help emotional processing effectively but avoidance might hinder its process. In addition, that avoiding the unwanted internal events (thoughts, feelings, etc.) could enhance people's distress ironically (Bond, et al., 2011).

The practical implications from the findings could be used in prevention or intervention with college students. Intervention dealing with depression among Thai students should address the importance of acceptance rather than altering or avoiding about their inner experiences.

Limitations

Limitation of this current study was the use correlational design which only explains relationships among mindfulness, rumination, experiential acceptance and depression. Besides, other situational variables including monetary issues or interpersonal relationships were not assessed to predict depression in Thai college students. Clearly, the future research could benefit from combining situational and internal factors to see the broader view of depression in Thai university students.

Though with this limitation, these findings could shed light on better understanding about the links between rumination, mindfulness, experiential avoidance and depressed moods in Thai university contexts. This finding could contribute to the body of research about depression in Thai university students. Specifically, acceptance/ experiential avoidance which have received little attention in the context of depression should be prioritizing.

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