PREVALENCE OF DISORDERED EATING AND ITS ASSOCIATION TO RISKY SEXUAL BEHAVIOUR IN FILIPINO UNIVERSITY STUDENTS

Investigating Prevalence of Disordered Eating and its Association to Risky Sexual Behaviour, in Filipino University Students

Thesis for Clinical Psychology Masters

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ABSTRACT

Eating disorders (ED) are a serious illness that can have detrimental effects on a individuals psychosocial functioning. Though the aetiology still remains unclear, there have been various investigations examining the association between ED and impulsivity in terms of maladaptive behaviours, such as substance abuse and risky sexual behaviours. Unfortunately, most of the existing research on this topic are based on western population samples. Therefore, the objective of this investigation is to determine the prevalence of disordered eating and examine the association of disordered eating behaviour, specifically the binge purge type, and risky sexual behaviour (RSB), within a non-western population sample (Philippines). 246 students from various universities completed both the eating attitudes questionnaire (EAT-26) and the Sexual Risk Survey (SRS). Results demonstrate a prevalence of 56.3% scoring above the cut-off point of 20, indicative of serious disturbances in eating behaviours or attitudes, and warrants further evaluation by a qualified professional. A weak positive correlation was found between disordered binge-purge behaviour and RSB ($r = .241$, $p < 0.001$). The findings exhibit that prevalence of disordered eating are higher than that of western results. These findings further support western literature demonstrating the co-occurrence of disordered eating and impulsivity.

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INTRODUCTION

Eating disorders (ED) are a serious, and often even fatal, illness (Fairburn & Harrison, 2003). These disorders focus on a severe disruption of regular eating habits, which damages both an individuals' physical and mental health (Fairburn & Harrison, 2003). The 3 most common categories of eating disorders recognized by the 'Diagnostic and Statistical Manual of Mental Disorders' (DSM) are, anorexia nervosa (AN), bulimia nervosa (BN), and the newest proposed diagnostic entity of the DSM5, 'binge eating disorder' (BED) (Hilbert, 2015). AN is defined as the pursuit of extreme weight loss, which can be further characterized by an extreme selectivity of food consumption, often with the full exclusion of fatty foods within their diet (Zipfel et al., 2015). AN is known to have the highest mortality rate out of all DSM disorders (Birmingham, Su, Hlynsky, Goldner & Gao, 2005). This is due not only to the detrimental effects of the clients' minimal weight, such as bone weakening, seizures and heart failure (Zipfel et al., 2015), but also to the increased risk of suicide (Birmingham, Su, Hlynsky, Goldner & Gao, 2005). The differential factor between AN and BN is that extreme food restriction is interrupted by binge eating incidents, which is followed by the exploitation of laxatives, or more commonly, self-induced purging (Fairburn and Harrison, 2003). These disorders are often accompanied by symptoms of anxiety and depressive disorders, such as impaired concentration, irritability and obsessional features, with a subgroup that engages in either substance misuse or self-injury, and occasionally both (Fairburn and Harrison, 2003). BED is considered the most common ED, more common than both BN and AN combined (Guerdjikova, Mori, Casuto & McElroy, 2017). This disorder is characterized by an individuals' frequently reoccurring binge eating episodes, associated with negative psychosocial difficulties (Hilbert, 2015). These binge eating episodes are unaccompanied by subsequent purging, but experiences of loss of control, shame, guilt and/or distress, usually follow (Hilbert, 2015). Mortality rates for ED diagnosed individuals are

almost double when compared to the general population, and roughly six times higher if the individual is diagnosed with AN (Schmidt et al., 2016).

EDs have detrimental effects on an individual's psychological functioning (Fairburn & Harrison, 2003). Studies exhibit that ED patients possess cognitive biases that affect the way they interpret both internal and external stimuli (Siep, Jansen, Havermans & Roefs, 2010). Results of these investigations indicate that ED patients have negative biases in memory, interpretation and attention, when processing stimuli related to body shape, weight and food. Alongside their biases, ED diagnosed individuals can be characterized by a self-blaming style, in which shape and weight are used as an explanation for ambiguous, negative, self-related events (Siep, Jansen, Havermans & Roefs, 2010). Individuals with disturbed eating behaviour have further been associated with low self-esteem and negative body image (Shisslak, Crago & Estes, 1995). EDs can further leads to a depleted quality of life, with ED patients having lower quality of life than healthy controls (Jenkins, Hoste, Meyer & Blissett, 2011). One study indicated that ED diagnosed individuals, when compared to individuals with physical impairments, such as cystic fibrosis, report a significantly lower quality of life in domains focused on home relationships, emotional reactions and social isolation (Jenkins, Hoste, Meyer & Blissett, 2011). ED patients are more likely to avoid conflict, rivalry and competition, with AN patients tending to supress feelings and placing others needs before theirs, in order to secure relationships (Hartmann, Zeeck & Barrett, 2009). Many AN diagnosed individuals have long time impairments in both employment, with one fourth being employed with no pay, and social functioning (Schmidt et al., 2016). Similarly, almost half BN diagnosed individuals have role impairments, which, in turn, damages ones' work life and close relationships (Schmidt et al., 2016).

EDs are complex disorders, in which the aetiology still remains unclear. Many factors have been associated to EDs, but one major factor that has been frequently investigated is

impulsivity (Bardone-Cone, Butler, Balk, & Koller, 2016; Bénard, et al., 2018; Fischer, Wonderlich, & Becker, 2018). This association is investigated because of the rash and uncontrollable nature of the behaviours characterizing the psychopathology of particular ED subtypes (Lavender & Mitchell, 2015). Through the years, publications have emphasized the role of impulsivity in relation to BED, and the bulimic-spectrum disorders (Giel, Teufel, Junne, Zipfel, & Schag, 2017). This is due to the seemingly 'more impulsive' characteristics of these disorders, in comparison to the more constrained and strict features of restrictive EDs, such as AN (restrictive type). Newer models that categorize impulsive action define 5 dispositions; sensation seeking, lack of planning, lack of perseverance and both positive and negative urgency (Lavender & Mitchell, 2015). There is an abundance of evidence linking BED and BN (binge-purge type) with elevated levels of sensation seeking, whereas the more restrictive types of ED's tend to display lower levels (e.g; Laghi, Pompili, Baumgartner, & Baiocco, 2015; Steward, et al., 2017). Negative Urgency has additionally been heavily associated to ED binge-purge type, due to the fact that individuals with ED's usually display raised negative emotionality, such as negative affectivity, increase neurotic tendencies and co-occurring affect disorders (e.g; Wolz, Granero, & Fernández-Aranda, 2017 & Fischer, Wonderlich, Breithaupt, Byrne, & Engel, 2018). In addition to that, given the richness of existing evidence demonstrating that affective states, such as increased negative affect, frequently trigger ED behaviours across the spectrum of ED psychopathology (Engel, et al., 2013), the significance of understanding the impulsive tendencies in the face of severe affective experience in relation to ED is clear.

Many different explanations have been developed to give reason to the evident association between ED and impulsivity (Lavender & Mitchell, 2015). One example of such is the predisposition model, in which describes that an individuals' pre-existing characteristics of their personality, such as impulsivity, may increase or decrease the risk of

developing ED's (Loxton, 2018). Further, the complication model describes that symptoms that stem from ED can impact an individual's personality, by making them more or less impulsive, for example (Lavender & Mitchell, 2015). Understanding the role of impulsivity in relation to ED psychopathology is relevant when looking at both the onset or maintenance of a specific eating disorder, and when looking at the implications these may have for treatment. For instance, individuals that experience negative affect often, and additionally possess impulsive characteristics, are more likely to develop BE or bulimic like symptoms (Lavender & Mitchell, 2015). As for treatment, individuals who more frequently display negative urgency can benefit with treatments more focused on the regulation of the individuals' negative affect experiences (Bardone-Cone, Butler, Balk, & Koller, 2016). Further, individuals who display a lack of planning may benefit less from interventions that include monitoring or planning their food intake (Bardone-Cone, Butler, Balk, & Koller, 2016). Finally, it is additionally essential to consider impulsivity as a construct of ED as it may impact the co-occurance of maladaptive behaviours, such as self-injury, substance use and risky sexual behaviour (RSB) (Wiederman & Pryor, 1996; Holderness, Wolfe & Maisto, 2000; Dawe & Loxton, 2004).

Research has continuously demonstrated the co-occurrence of RSB as a consequence of impulsivity within ED patients, specifically, those that more frequently engage in binge-purge behaviors (Shisslak, Crago & Estes, 1995, Wiederman & Pryor, 1996, Dawe & Loxton, 2004). Even outside ED population groups, impulsivity is included within models explaining RSB, for both adolescents and adults, consistently (McCoul & Haslam, 2001, Dir, Coskunpinar & Cyders, 2014, Leeman, Rowland, Gebru & Potenza, 2019). Research has continuously exhibited associations between the dimensions of impulsivity and types of RSB, for example, individuals who display elevated sensation seeking report more frequent engagement in sex, more life time sexual partners and less condom use (Dir, Coskunpinar &

Cyders, 2014). Evidence has additionally revealed an association between both positive and negative urgency and STD acquisition, stating that individuals, especially adolescents, may be drawn to RSB in response to their heightened positive or negative emotions (Dir, Coskunpinar & Cyders, 2014). Further, individuals who display an elevated lack of planning and perseverance have been linked to unprotected sex, early sexual debut, unplanned pregnancy and STD acquisition (Dir, Coskunpinar & Cyders, 2014).

There is a plethora of available publications on EDs, its prevalence, and its association to impulsivity, RSB and other maladaptive behaviors, allowing us to better understand the psychopathology of the disorder. Regrettably, this large body of research was mostly conducted by Westerners, on western and highly educated populations samples (Arnett, 2008). As a result, the conclusions from these studies can hardly be generalizable to the rest of the world. When looking through available literature focused on eating disorders and its prevalence, it stands out that most of the research conducted focus mainly on western populations, such as the United States and western Europe. (Hoek, 1993; Hoek & van Hoeken, 2003; Waxman, 2009; Smink, van Hoeken & Hoek, 2012). Though there are several publications focused on non-western regions, such as Africa and Asia, these publications are minimal in comparison to the extent of research done on Western populations. Research including Asian samples demonstrates that most publications within this region are based on Japanese and Chinese cultures (Tsai, 2000). The author additionally stated that many Asian countries, such as the Philippines, have no publications whatsoever on the prevalence of EDs. One should not assume that findings based on a particular population sample can be generalized to other population groups. Individuals are unique as a result of their distinctive cultural backgrounds, social groups, rules and norms (Pillai & Chaudhary, 2009). This can also be said for the Philippine population. Though it has been shown that the Philippines have strong historical ties to the US (McFerson, 2011), the country has been subjected to the

influence of many other states around the world, including Spain, China or Japan (Ubaldo, 2018). While these links have had tremendous impacts on the local culture, this should not be equated as the sharing of a single culture. Filipino culture is a unique blend of local, regional and global influences, it is thus essential, despite certain similarities, to not simply assume that findings on prevalence would be alike.

Research has shown that the prevalence of EDs in Asian populations, including that of the Philippines, have been growing due to globalization and industrialization (Pike & Dunne, 2015). Furthermore, risk factors of ED's are also present within the Philippine population, such as increased neuroticism, one of the big five personality traits, which has been demonstrated to exist in some Filipinos (Church, Reyes, Katigbak & Grimm, 1997). Sociocultural models additionally demonstrate that presence of unachievable beauty standards, such as extreme thinness, and the objectification of women are also a risk factor in the development of ED's (Striegel-Moore & Bulik, 2007). There is a prominent presence of unachievable beauty standards within Philippine media, which is a factor that adds to the association of thinness with beauty in Filipino culture (Magdaraog, 2014). Research additionally reveals that many Filipino individuals strive to achieve western kind of beauty, as they believe this will accomplish both wider acceptance from others, and self-fulfilment (Magdaraog, 2014). Further, there is much objectification and stereotypical representation of women in the Philippine media. Research has indicated that there is a significant difference in the portrayal of gender on Philippine television advertisements, in which women were mostly shown at home, as supposed to a workplace, and often provocatively dressed (Prieler & Centeno, 2013). In addition to that, the publication demonstrated a significant stereotypical representation associated to certain product categories (Prieler & Centeno, 2013). The stereotypical and objectified representation of gender in Philippine media reinforce the

ideology of the value in beauty and the necessity to pursue attractiveness, which can increase the risk of ED development (Striegel-Moore & Bulik, 2007).

Though it has been shown that the majority of the Philippine population have very strict and conservative opinions about sex (Hailu, Mergal, Nishimwe, Samson & Santos, 2018), these opinions may not correlate with their behaviour. According to the Philippine council for health research and development, in 2014, 32% of Filipinos aged 15-24 engage in pre-marital sex, 9% higher than results found in 2002 (Bongolan, 2014). They additionally state that out of all the young Filipinos who have engaged in premarital sex, 78% of these individuals had their first time engagement in premarital sex without the use of protective contraception (Bongolan, 2014). This signifies that the youth of the Philippines are at higher risk of attaining a sexually transmitted disease (STD) or unwanted pregnancy. In fact, the percentage of pregnancy in teenaged girls, aged 15-19, has gone up to 13.6% in 2014, which had doubled since 2002 (Bongolan, 2014). Since the Philippines have very conservative views on sex and sexual education, the youth are not able to receive substantial education about sex and therefore are less likely to engage in safe sexual behaviours. If impulsivity is linked to disordered eating behaviour, and if there is a percentage of the population who do possess these disordered eating habits, then it gives reason to work on the improvement of sex health services and education in the Philippines.

This research paper questions whether the prevalence of disordered eating behavior, within Filipino university students, will be similar to that of western population groups, and whether their binge-purge behaviors are associated to RSB. 2 hypotheses have been developed for the purposes of this investigation. Firstly, that prevalence of disordered eating will be similar, if not higher, than findings on western population groups. Secondly, that there will be a strong association between binge-purge type eating behavior and risky sexual behavior.

METHODS

Literature

A small literature review was done to examine the findings of the prevalence of eating disorders in western populations. To find the appropriate literature, a search was conducted on databases such as; Google Scholar, Pubmed, Psychinfo, Scopus and Web of Science. Key words such as, but not limited to; 'Eating Disorders', 'prevalence', 'incidence', 'Screening', 'Western' were used.

Inclusion criteria of these publications include date, using articles solely from the year 1999 and over, to focus on a more current prevalence of ED, as prevalence rates may change over time. Only researches conducted on western populations, using non-clinical cohorts, will be included to secure that the comparison of between findings of a Philippine population sample and that of western populations.

From the Original 49 publications found, only 20 will be used for the purposes of this literature review

Participants

Participants of this research study consisted of 246 Filipino students from several different universities of the Philippines. Inclusion criteria strictly comprises of Filipino university students, over the age of 18. 6 participants were removed from the analysis. 5 of which chose not to include their data in the analysis. 1 participant was removed due to his inappropriate responses.

Materials

Disordered eating behaviour

The EAT-26 (Garner & Garfinkel, 1979) was used to measure ED symptomology amongst the participants, evaluating symptoms such as dieting, oral control, bulimia and food preoccupation. The EAT-26 is a widely used and validated self-report questionnaire

(Gleaves, Pearson, Ambwani & Morey, 2014). The questionnaire contains 26 standardized items concerning the frequency of disordered eating behaviours, such as “I avoid foods with sugars in them”, “I vomit after I have eaten” or “I find myself preoccupied with food”. Participants responses are based on a 6 point likert scale ranging from ‘never’ to ‘always’. Questions 1 to 25 are scored similarly, with responses ‘sometimes’, ‘rarely’ and ‘never’ having 0 points, and ‘always’, ‘usually’ and ‘often’ scored with 3 points, 2 points and 1 point respectively. Question 26 is scored oppositely. A total score of 20 or more is indicative of serious disturbances in eating behaviours or attitudes, and warrants further evaluation by a qualified professional. Research demonstrated that the reliability scores of eat was .86 (Gleaves, Pearson, Ambwani & Morey, 2014). The EAT-26 has been reproduced in the form of a google survey for easier access to the Philippine population, and in print.

Bulimic and Binge eating behaviours

Statements focused on food preoccupation, bulimia and binge eating (questions 3, 4, 9, 18, 21 and 25) were used to asses BN and BED behaviours within the participants (Garner & Garfinkel, 1979). These statements were, “Find myself preoccupied with food”, “Have gone on binges where I feel that I may not be able to stop”, “Vomit after I have eaten”, “Feel that food controls my life”, “give too much time and thought to food”, “Have the impulse to vomit after meals”. The score of these questions were totalled, with higher scores indicating more frequent bulimic and binge eating behaviours.

Risky sexual behaviour

The sexual risk survey (SRS) developed by Turchik and Garske (2009) was used to collect data about sexual behaviour amongst the university students. The SRS consists of 23 open ended questions with subscales focused on, risky sex acts, sex taking with uncommitted partners, intent to engage in risky sexual behaviours, impulsive sexual behaviours, et cetera. Each questions examine the frequency of a participants’ risky sexual behaviour, such as;

"how many times have you had sex with someone you didn't know very well or just met?", "How many times have you had vaginal intercourse without protection?" or "How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for sexually transmitted diseases?". Previously validated, the SRS have been found to have good reliability (alpha) scores, ranging from .69 - .89 depending on the subscale (Oster, 2015). Scores per question depend on the frequency of the risky sexual acts, scores are totalled with s higher score indicating more frequent risky sexual behaviour. This questionnaire was, likewise, reproduced in the form of a google survey and in print.

Procedure

To successfully conduct this research, 2 questionnaires, the EAT-26 and the Sexual risk survey had been reproduced in the form of one google survey and in print. The link was then sent out to University professors who then sent it out to their students. Further, posters were placed around 3 different university campuses, which contained both the link to the questionnaire, and a QR code in which participants could scan to access them on their mobile device. Lastly, students were invited to sessions in which they were able to answer the print version of the questionnaire. The results were then scored on excel before exporting the final data to SPSS for further analysis

Statistical Analysis

Prevalence

Prevalence was calculated by totalling the number of participants who scored 20 or above on the EAT-26 and dividing that by the total number of participants included in the study. The number was then multiplied by 100 to obtain an exact percentage.

Association between risky sexual behaviour and binge-purge type eating behaviour

A Pearson product-moment correlation coefficient was used to analyse the association between participants' ED pathology, specifically the binge/purge type, and risky sexual behaviour. Scores of the binge-purge subscale of the EAT-26 and the SRS were totalled and used for the purposes of this analysis.

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LITERATURE REVIEW

Articles using EAT 26

Title & Country	Author(s)	Year	Sample size	Potential cut off score	Results
Abnormalities in weight status, eating attitudes, and eating behaviors among urban high school students: Correlations with self-esteem and anxiety (USA)	Pastore, Fisher & Friedman	1996	1001	≥ 21	15% of females 6% of males
Disordered eating attitudes and behaviours in teenaged girls: a school based study (Italy)	Jones, Bennet, Olmsted, Lawson & Rodin	2001	1739	≥ 20	13% of 12-14 year olds 16% of 15-18 year olds
Risk for disordered eating relates to both gender and ethnicity for	Hoerr, Bokram, Lugo, Bivis & Keast	2002	1620	≥ 20	10.9% of females 4.0% of males

college students (USA)					
The spectrum of eating disorders: prevalence in an area of northeast Italy (Italy)	Miotto, Coppi, Frezza &Preti	2003	1000	≥ 20	15.8% of females 2.8% of males
Eating disorders and body image in Spanish and Mexican female adolescents (from both Barcelona [Spain] and Mexico city [Mexico])	Toro, Gomez-Peresmitré, Sentis, Vallés, Casulà, Castro, Pineda, Leon, Platas & Rodriguez	2006	467 Spanish 329 Mexican	≥ 20	17.9% of females 13.7% of males
Screening high school students for eating disorders: Results of a national initiative (USA)	Austin, Ziyadeh, Forman, Prokop, Keliher & Jacobs	2008	5740	≥ 20	15% of females 4% of males
Clinical and Subclinical	Hoyt & Ross	2008	555	≥ 20	15.1% of females

Eating Disorders in Counseling Center Clients: A Prevalence Study (USA)					6.5% of males
Eating attitude test for a population of 1809 students in high schools in the province of L'Aquila (Italy)	Marronno, Rossi, Aquillo & Scacchioli	2009	1809	≥ 20	4.7% of females 1.7% of male
Prevalence of overweight and obesity, and dieting attitudes among Caucasian and African American college students in Eastern North carolina: A cross-sectional survey (USA)	Sira & Pawlak	2010	582	≥ 20	13.04% of females and 10.2% of males

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Evaluation of disordered eating tendencies in young adults (Turkey)	Sanlier, Varli, Macit, Mortas & Tatar	2017	1359	≥ 20	19.3% of females 19.4% of males

Articles using other assessment tools

Title	Author(s)	Year	Sample size	Instruments and potential cut off	Results
Prevalence, incidence, impairment, and course of the proposed DSM-5 eating disorder diagnoses in an 8-year prospective community study of young women.	Stice, Marti, Rohde	2013	496	Eating disorder diagnostic interview (EDDI)	13.1%
Prevalence and severity of DSM-5 eating	Smink, Hoeken,	2014	296	Extensive self-assessment questionnaire &	5.7% of females

disorders in a community cohort of adolescents (Netherlands)	Oldehinkel, Hoek			eating disorder module of the SCID and EDE	1.2% for men
DSM-5 eating disorders and other specified eating and feeding disorders: Is there a meaningful differentiation? (Australia)	Fairweather-Schmidt & Wade	2014	699	Eating disorder Examination (EDE)	10.4% (with 5.4% being threshold ED's)
Eating disorders in a multi-ethnic inner-city UK sample: prevalence, comorbidity and service use (UK)	Solmi, Hotopf, Hatch, Treasure & Micali	2015	1698	SCOFF (cut-off score of 2 or more)	7.4%

Weight Status and DSM-5 Diagnoses of Eating Disorders in Adolescents From the Community (Canada)	Flament, Henderson, Buchholz, Obeid, Nguyen, Birmingham & Goldfield	2015	3043	The EDDS (cut-off score of 16.4)	2.2% males and 4.5% females
Prevalence of Eating Disorder Risk and Associations with Health-related Quality of Life: Results from a Large School-based Population Screening (Austria)	Zeiler, Waldherr, Philipp, Nitsch, Dür, Karwautz & Wagner	2015	3610	SCOFF	23.55% were screened at risk for an eating disorder 30.9% of females and 14.6 of males
The prevalence, correlates, and help-seeking of	Mohler-Kuo, Schnyder, Dermota, Wei & Milos	2016	10 038	CIDI	5.3% of females 1.5% of males

eating disorders in Switzerland					
The Prevalence of Past 12-Month and Lifetime DSM-IV Eating Disorders by BMI Category in US Men and Women (USA)	Duncan, Ziobrowsky & Nicol	2017	12 337	CIDI	2.22% in men and 4.93% in women
Prevalence and correlates of self-reported disordered eating: A cross-sectional study among 90 592 middle-aged Norwegian women	Lande, Rosenvinge, Skeie & Rylander	2019	90 592	Food frequency questionnaire	28%
Disordered eating among Australian	Sparti, Santomauro, Cruwys,	2019	2298	Youth Risk Behavior Surveillance	11% experience a

adolescents: Prevalence, functioning, and help received	Burgess & Harris	System (YRBSS) & clinical interview Disordered eating severity determined by DSM criteria	suspected eating disorder

RESULTS

Demographics & Prevalence

63.3% of participants were female and 35.4% of participants were male and .8% identified as gender neutral. 36.7% of participants are aged between 18-21, 32.5% of participants are aged between 21-26 and 30.8% of participants are age 26 and older. 74.6% of participants identified as heterosexual, 33% identified as homosexual, 26% identified as bisexual and 2% identified as pansexual.

The mean score of the EAT-26 (*see figure 1)* was found to be 23.6 with a standard deviation of 13.6. The Mean EAT score for females was 22.1 with a standard deviation of 13. The mean EAT score for males was 25.9 with a standard deviation of 14.3. The prevalence of potential disordered eating behaviour within the population sample was found to be at 56.3%, with 52.6% of females with a score of 20 or more and 48.2% of males.

Figure 1 Descriptive statistics on EAT-26

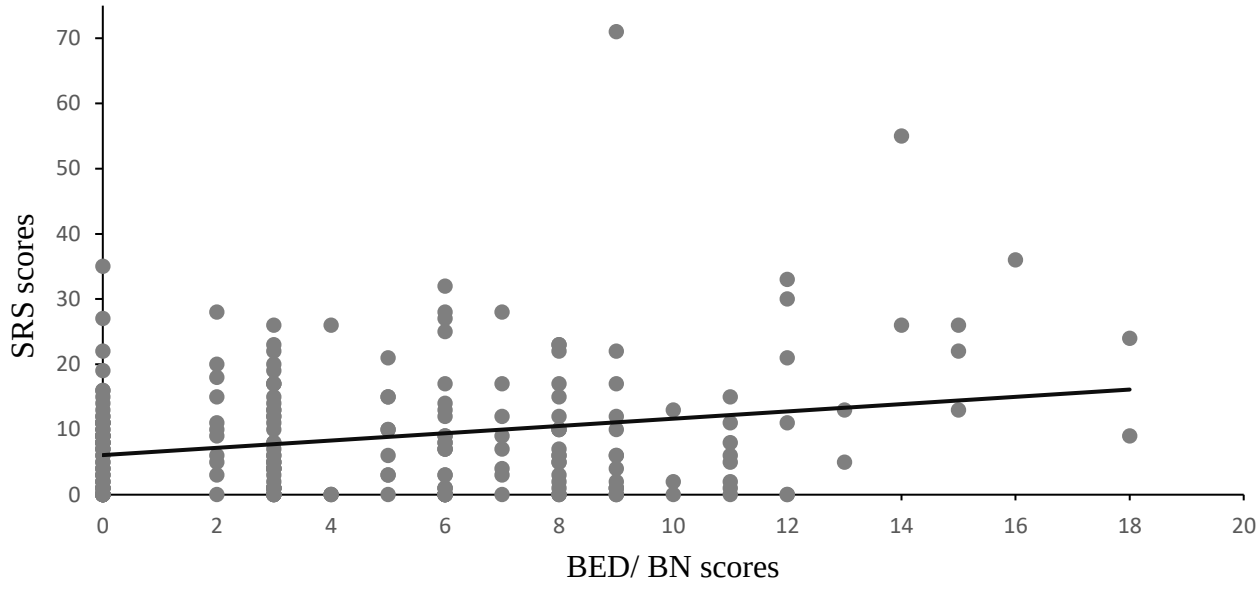
	n	M	SD	% EAT ≥ 20
Total	240	23.58	13.61	56.25%
Male	85	21	12.54	52.63%
Female	153	22.14	13.20	48.24%
Gender neutral	2	39	16.97	100%

Association between BED/BN behaviours and RSB

To assess the relationship between RSB and binge-purge type disordered eating behavior, a Pearson product-moment correlation coefficient was used. A significant positive correlation was found between the two variables, $r = .241$, $p < 0.001$. Figure 2 demonstrates

the summarized results. Overall, there was a weak, positive correlation between RSB and Binge purge behavior, in which an increase in one variable correlates with the increase of the other.

Figure 2



DISCUSSION

This study is one of few that investigates prevalence of eating disorders, and the only examination of eating disorders and its association to risky sexual behaviors within a Filipino population sample. Two broad themes have emerged from this analysis. First, consistent with the research of Pike & Dunne, 2015 in 'The Rise of Eating Disorders in Asia', there is a high prevalence of eating disorders within the sample, with results demonstrating that 56.3% of students, 52.6% of females and 48.2% of males, are 'at-risk' of an eating disorder. These results are significantly larger than that of western findings, which usually average between 5-20% in females and 3-17% in males. This could be due to the importance Filipinos place on looks (Magdaraog, 2014). Additionally, since Filipinos place higher value on western physical features, such as lighter skin tones (Rondilla, 2012), they may be more concerned with the way they look, as Filipinos possess different physical traits (Magdaraog, 2014). It is important to note that almost half the participants are either theatre students or actors, which could have influenced the prevalence scores. This influence may be explained by the importance of appearance in performing arts, and the especially competitive nature of the profession (Kapsetaki & Easmon, 2017). In addition to that, adolescents who wish to pursue such a career may feel more pressured to fit a certain standard of appearance (Kapsetaki & Easmon, 2017). Moreover, theatre students may be inclined to develop other related skills, such as singing and dancing. Dancers, in particular, have especially demanding body expectations, that can increase the risk of ED development (Vitzthum et al, 2013).

Additionally, as hypothesized, the results demonstrate that there is a significant correlation between binge-purge type disordered eating behavior and risky sexual behavior. These findings are consistent with that of other investigations of disordered eating and risky sexual behavior (Shisslak, Crago & Estes, 1995, Wiederman & Pryor, 1996, Dawe & Loxton, 2004). These findings are also consistent with Western investigations of ED's and other

maladaptive behaviours, such as excessive alcohol and substance abuse (Wiederman & Pryor, 1996; Holderness, Wolfe & Maisto, 2000; Dawe & Loxton, 2004). The present RSB can be rationalized by the co-occurrence of EDs and impulsivity. Though there was a present significant association between the two variables, the correlation between the two was found to be weak, contradicting the hypothesis' expectation of a strong correlation. This could be due to the extreme religious values of the Philippine population. As stated before, Filipinos have very strict and conservative opinions on sex (Hailu, Mergal, Nishimwe, Samson & Santos, 2018). With most of the Filipino population being catholic (Dunlop, 2018), and with premarital sex being viewed as a sin within the religion, individuals may be less inclined to engage in sexual behaviors. Perhaps if the investigation focused on substance use, such as alcohol and tobacco, as has been previously researched, a stronger correlation might be found.

Limitations of this investigation mostly focus around the participant pool, in which half of the participants come from a theater background. Furthermore, the investigation solely examines individuals who are currently in university. To get a more realistic perspective of the prevalence of EDs in the Philippines, a more varied population sample, with differing academic backgrounds, should be used to obtain more generalizable results. Further, to investigate the association between binge-purge type behaviors and RSB, questions focused on food preoccupation, bulimia and binge eating were totaled, which consisted of only 6 questions. A more specific questionnaire on binge-purge type behavior might provide more reliable results.

Future research should investigate prevalence of ED's in the Philippines with a more varied participant sample, to be able to generalize the results to the rest of the population. Further, investigations on ED's and its association to impulsivity in terms of previously associated maladaptive behaviors, aside from risky sexual behavior, within the Philippines,

should be examined. These explorations should additionally examine impulsivity, using measures such as the Eysneck Impulsivity scale, as a mediator between binge-purge type of disordered eating behavior and the maladaptive behavior being studied.

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PREVALENCE OF DISORDERED EATING AND ITS ASSOCIATION TO RISKY SEXUAL BEHAVIOUR IN FILIPINO UNIVERSITY STUDENTS

APPENDIXA consent form

My name is Megan Cornelissen and I am a student in Utrecht University, in the Netherlands, and I am currently taking a masters in clinical psychology. I am now in the process of writing my thesis which heavily focuses on Filipino university students, their eating habits and their sexual behaviour. PLEASE REMEMBER THAT ALL YOUR INFORMATION WILL BE CONFIDENTIAL. I will not be able to tell who you are when I receive your responses. I will compile and analyse all the data I receive and only these general results will be published, so please answer as truthfully as possible! There are 3 main sections to this questionnaire: The first section consists of general questions about your age and where you're from etc. The second section consists of questions focused on your eating habits The final section consists of questions related to your sexual behaviour. At the end of the questionnaire, I will explain what my research is about and how you will be able to contact me if you have any further questions. If my survey has evoked any unpleasant emotions that you would like to speak about, please contact my thesis supervisor Dr. Lot Sternheim at L.C.Sternheim@uu.nl.

Do you give your consent for your responses to be used for the purposes of my thesis? (all responses will be confidential and I, nor anyone else reading, will be able to tell who you are)

YES NO

SIGNATURE: _____

PREVALENCE OF DISORDERED EATING AND ITS ASSOCIATION TO RISKY SEXUAL BEHAVIOUR IN FILIPINO UNIVERSITY STUDENTS

APPENDIX B Complete questionnaire

1. How old are you? _____
2. What is your sex? _____
3. What is your sexual orientation? _____
4. What degree are you currently pursuing? Bachelors / Masters / Other:_____
5. What is your current year in that programme? _____
6. Are you Filipino? YES / NO
7. If not, please specify: _____
8. Have you ever been tested for any sexually transmitted disease STD's? YES / NO
9. What is your relationship status? Single / dating / married / other:_____
10. If you are in a relationship, have you and your partner ever discussed the possibility of having STD's (if one of you ever had one, or have been tested):

    YES / NO / OTHER:_____

11. If the answer was yes, please specify how:

    _____

12. Do you take birth control pills? YES / NO / NOT APPLICABLE
13. What is your height? _____
14. What is your weight?_____
15. What was your heaviest point?_____
16. What was your lightest adult weight?_____
17. What is your ideal weight? _____

PREVALENCE OF DISORDERED EATING AND ITS ASSOCIATION TO RISKY SEXUAL BEHAVIOUR IN FILIPINO UNIVERSITY STUDENTS

This next section asks questions on your eating behaviour. Please fill out the below form as accurately, honestly and completely as possible. There are no right or wrong answers. All of your responses are confidential.

Please circle a response for the following statements based on one of the following numbers:

1 – always, 2 – usually, 3 – often, 4 – sometimes, 5 – rarely, 6 – never

1. I am terrified of being overweight

   1 2 3 4 5 6

2. I avoid eating when I'm hungry

   1 2 3 4 5 6

3. I find myself preoccupied with food

   1 2 3 4 5 6

4. I have gone on eating binges where I feel that I may not be able to stop

   1 2 3 4 5 6

5. I cut my food into small pieces

   1 2 3 4 5 6

6. I am aware of the calorie content of foods that I eat

   1 2 3 4 5 6

7. I particularly avoid food with high calorie content (I.E. bread, rice, potatoes, etc.)

   1 2 3 4 5 6

8. I feel that others would prefer if I ate more

   1 2 3 4 5 6

9. I vomit after I have eaten

   1 2 3 4 5 6

10. I feel extremely guilty after I eating

1 2 3 4 5 6

11. I am preoccupied with the desire to be thinner

1 2 3 4 5 6

12. I think about burning up calories when I exercise

1 2 3 4 5 6

13. Other people think I'm too thin

1 2 3 4 5 6

14. I am preoccupied with the thought of having fat on my body

1 2 3 4 5 6

15. I take longer than others to eat my meals

1 2 3 4 5 6

16. I avoid foods with sugar in them

1 2 3 4 5 6

17. I eat diet foods

1 2 3 4 5 6

18. I feel that food controls my life

1 2 3 4 5 6

19. I display self-control around food

1 2 3 4 5 6

20. I feel that others pressure me to eat

1 2 3 4 5 6

21. I give too much time and thought to food

1 2 3 4 5 6

22. I feel uncomfortable after eating sweets

1 2 3 4 5 6

23. I engage in dieting behaviour

1 2 3 4 5 6

24. I like my stomach to be empty

1 2 3 4 5 6

25. I have the impulse to vomit after meals

1 2 3 4 5 6

26. I enjoy trying rich new foods

1 2 3 4 5 6

For the next set of questions, please pick an answer based on your eating behaviour **for the past 6 months.** Binge eating is defined as eating much more than most people would under the same circumstances and feeling that eating is out of control.

1. Have you gone on eating binges where you feel that you might not be able to stop?
    a. Never
    b. Once a month or less
    c. 2-3 times a month
    d. once a week
    e. 2-6 times a week
    f. once a day or more
2. have you ever made yourself sick (vomited) to control your weight or shape?
    a. Never
    b. Once a month or less
    c. 2-3 times a month

   d. once a week
   e. 2-6 times a week
   f. once a day or more

3. Have you ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?
   a. Never
   b. Once a month or less
   c. 2-3 times a month
   d. once a week
   e. 2-6 times a week
   f. once a day or more
4. Have you exercised more than 60 minutes a day to lose or to control your weight?
   a. Never
   b. Once a month or less
   c. 2-3 times a month
   d. once a week
   e. 2-6 times a week
   f. once a day or more
5. Have you lost 20 (9.07 kg) or more pounds in the past 6 months?
   a. Yes
   b. no

This next section asks questions about your sexual behaviour. Please read the following statements and circle the number that is true for you OVER THE PAST 6 MONTHS. If you do not know for sure how many times a behaviour took place, try to estimate the number as

close as you can. If the question does not apply to you or if you have never engaged in the behaviour in the question, please circle 0. Please do not leave items blank. Remember that in the following questions "sex" includes oral, anal and vaginal sex and that "sexual behaviour" includes passionate kissing, making out, fondling, petting, and any physical stimulation, such as hand-to-genital stimulation.

Base your answers on the following statements:

0 – never

1 – less than once a week

2 – averaging about once a week

3 – averaging about 2 times a week

4 – averaging about 3 times a week

5 – averaging about 4 times a week or more

In the past 6 months….

1. How many partners have you engaged in sexual behaviour with but not had sex with?

   0 1 2 3 4 5

2. How many times have you left a social event with someone you just met?

   0 1 2 3 4 5

3. How many times have you “hooked up” and engaged in sexual behaviour with someone you didn’t know or didn’t know well but did not have sex?

   0 1 2 3 4 5

4. How many times have you gone out to bars/ parties/ social events with the intent of engaging in sexual behaviour with someone?

   0 1 2 3 4 5

5. How many times have you gone out to bars/parties/social events with the intent of "hooking up" and having sex with someone?

   0 1 2 3 4 5

6. How many times have you gotten so drunk or high that you couldn't control your sexual behaviours?
7. How many times have you had an unexpected and unanticipated sexual experience?

   0 1 2 3 4 5

8. How many times have you had a sexual encounter you engaged in willingly but later regretted?

   0 1 2 3 4 5

For the next set of questions, please follow the same instructions as before, basing your answer on the PAST 6 MONTHS.

If you never had sex (oral , anal or vaginal), or if the question does not apply to you, please put a 0 on each blank.

In the past 6 months….

1. How many partners have you had sex with?

   0 1 2 3 4 5

2. How many times have you had vaginal intercourse without a latex or a condom?

   Note: Include times when you have used a lambskin or membrane condom.

   0 1 2 3 4 5

3. How many times have you had vaginal intercourse without protection?

4. How many times have you given or received fellatio (oral sex with a man) without a condom?

   0 1 2 3 4 5

5. How many times have you had vaginal intercourse without a latex or a condom?

   Note: Include times when you have used a lambskin or membrane condom.

   0 1 2 3 4 5

6. How many times have you had anal sex without protection?

   0 1 2 3 4 5

7. How many times have you or your partner engaged in anal penetration by a hand (“fisting”) or other object without a latex glove or condom followed by unprotected anal sex?

   0 1 2 3 4 5

8. How many times have you given or received analingus (oral stimulation of the anal region, “rimming”) without a dental dam or "adequate protection"?

   0 1 2 3 4 5

9. How many people have you had sex that you know but are not involved in any sort of relationship with (i.e. “friends with benefits”, “fuck buddies”)?

   0 1 2 3 4 5

10. How many times have you had sex with someone you don't know well or had just met?

    0 1 2 3 4 5

11. How many times have you or your partner used alcohol or drugs before or during sex?

    0 1 2 3 4 5

12. How many times have you had sex with a new partner before discussing sexual history, IV (intravenous or injecting) drug use, disease status and other current sexual

partners?

0 1 2 3 4 5

13. How many times (that you know of) have you had sex with someone who has had many sexual partners?

0 1 2 3 4 5

14. How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STD's/HIV?

0 1 2 3 4 5

15. How many partners have you had sex with that you didn't trust?

0 1 2 3 4 5

16. How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period?

0 1 2 3 4 5

PREVALENCE OF DISORDERED EATING AND ITS ASSOCIATION TO RISKY SEXUAL BEHAVIOUR IN FILIPINO UNIVERSITY STUDENTS

APPENDIX C debrief

Thank you for completing the questionnaire.

This thesis aims to investigate whether or not the prevalence of disordered eating behaviour are similar to that of the western population, and whether this disordered eating behaviour is associated to impulsivity in terms of risky sexual behaviour.

If you would like to know more about my research, or if you would like a copy of it once it is finished, please do not hesitate to email me!

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