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*Review*

# **Adolescents and marijuana: Its prevalence, underpinning causes, effects and implications on the next generation**

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**It is customarily challenging and fruitless to prevent young adults and teens from drug experimentation. Yet, the onset of marijuana or cannabis use by school-age young adults and teens could be delayed with holistic interventions that aim at involving stakeholders (that is schools, families, agencies, media, etc.). The objective of this review was to sum-up continental comparative data on the prevalence of cannabis or marijuana use among young adults. Although continental studies on the prevalence, causes, effects, and preventions of marijuana use are limited, there is evidence to suggest that marijuana use is still on the rise among young people globally, especially in Africa, Europe, and America. False gratification such as, its harmless effects, its ability to aid performance, and its ability to protect one against superstitious forces are factors among others that lead adolescents to its experimentation.**

**Key words:** Adolescents, marijuana, cannabis, prevalence.

## **INTRODUCTION**

In the past 2 to 5-decade, adolescents' narcotic drug abuse and addiction have emerged as a thematic social canker affecting both developed and developing countries of the world due to its possibilities of triggering behavioral problems ranging from addiction to dependence that does not only affect health and model the users functioning but also leave the societies in which they live at risk.

Besides, the use of the narcotic substance by young people between 10 and 24 years of age has also been cited as affecting the developmental phase that occurs as the brain ripen and undergoes through emotional and cognitive maturity (Degenhardt et al., 2016). One of such

substance that is associated with the forenamed menace to adolescents and societies is marijuana.

For generations now, marijuana also known as cannabis, has been a prohibited substance in most parts of the world because of its noxious nature. However, the turnover is advancing faster as several states and nations have or are amending regulations to soften restricted laws against its use and production; thereby leaving adolescents at the receiving end.

On its production and cultivation, between 1998-2007, the Report on Global Illicit Market (2009) reported that marijuana is produced in over 170 countries around the world and its market uninterruptedly continued to receive

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new entrants ranging from developed and wealthy nations to under-developed and developing countries (Connolly and Donovan, 2009). Marijuana is also officially viewed by WHO (2015) as a commonly grown, trafficked, and exploited drug in the world. This means its availability to adolescents will continue to be effortless. Therefore, with the expectation that adolescents marijuana prevalence (that is lifetime and past year) may vary from time to time and region to region, it is important for a detailed update on its prevalence, the range of factors that drive its usage in terms of regional, cultural and continental influence as well as its effects and implication to social workers and societies. In effect, this will indirectly outline significant dynamic inputs for its interventions.

### **GLOBAL PREVALENCE OF MARIJUANA/CANNABIS USE AMONG ADOLESCENTS**

A comprehensive global comparative data on adolescents' marijuana/cannabis prevalence has often been difficult to obtain because adolescents age groups are divided differently across the world while other nations do not or barely perform surveys to track the trends and prevalence. For this review, systematic evidences were examined across multiple national and individual studies such as The UNODC World Drug Report (2018; 2019), EMCDDA European drug report (2018), Drug Statistical Bulletin (2019), ESPAD Group Report (2016), Australian Criminal intelligence commission report on illicit drugs (2017-2018), CICAD report on drug use (2019), etc. to make conclusions on the trends and prevalence.

The predefined theme to search for relevant studies on the topic started generally with "cannabis/marijuana and adolescents, prevalence across the world" and ended with a more focus on continental findings. Since there was no unique adolescents classification across the world, the selection criteria for age ranged between 10-24 years while more priorities were given to studies and findings not older than 5-years with age classification below 20 years. In monitoring the trend, the aims were to pinpoint studies which reported the following indicators: any cannabis/marijuana use, how regular, and at what age.

#### **Europe**

Cannabis indeed constitutes Europe's most commonly consumed illicit drug. The drug's prominence is apparent from its role in the seizures. For example, according to the United Nations Office on Drugs and Crime (UNODC, 2019), Europe accounts for 15% of all cannabis herb and resin confiscated in 2017. Moreover, cannabis/marijuana use among European adults aged 15-34 was estimated

to be 14.6 million in 2015 (11.7%), with 8.8 million (15.2%) between the ages of 15-24 years (EMCDDA, 2015).

In 2018, the European School Survey Project on Alcohol and Other Drugs (ESPAD) among age 15-16-years students from 35 European countries, 18% reported the use of cannabis at least once in a year, while 8% reported cannabis use in the past month. Higher lifetime prevalence among students in these 35 countries was reported in Czech Republic (37% in 2015), Spain (31% in 2015), France (31% in 2016), Bulgaria (27% in 2016), Slovakia (26% in 2015), the Netherlands (22% in 2016) and UK (19% in 2016) (European Drug Report, 2018). At the least end of lifetime use, rates as low as below 10% were reported among 4 nations of the Nordic countries (Norway 7% in 2016, Finland 8% in 2015, Sweden 5% in 2016, Romania 8% in 2016, Cyprus 7% in 2016 and Greece 9% in 2015) (European Drug Report, 2018).

Contrary to the 2015-2018 European Drug and ESPAD studies, the prevalence of marijuana use among adolescents was reported to be 31% in France, 27% in Italy, 15% in Portugal, 13% in Malta, and 9% in Greece (Muscat et al., 2017), whereas data from the (EMCDDA) statistical bulletin 2019 reported a lifetime prevalence of cannabis among aged 15-24 years to range from 4.2 to 4.6% in 2016. On country basis, France 44.2%, the Czech Republic 39.2%, and the Netherlands 31.5% were countries with a higher lifetime cannabis prevalence among the fore mentioned age group in 2016, while low rates were reported in Romania 8.9% and Portugal 13.2%.

However, on past month usage, an estimated 7% adolescents aged 15-16 years were reported to have used cannabis in the past month with France 17% and Italy 15% among the highest in their 15-16 year olds; while lower figures were reported in Sweden and Finland (ESPAD, 2016). Among adolescents aged 15-24 years, past-month cannabis use was also estimated as: Italy 11.7% in 2017, Denmark 7.8% in 2017, Czech Republic 10% in 2016, Netherlands 9.2% in 2016, Bulgaria 8% in 2016 and UK 7.6% in 2016 (EMCDDA Statistical Bulletin 2019).

Regarding the trend in Europe, the lifetime cannabis/marijuana prevalence among adolescents is drastically increasing as most figures are above 20%, with France and the Czech Republic being identified as countries with a high lifetime prevalence in most relevant findings. This high prevalence in France may be attributed to the availability of cannabis/marijuana in the region, thereby making it easily accessible by adolescents.

#### **Africa**

As long as lifetime cannabis prevalence in 2017 is

estimated to be around 44.9 million (6.4%) in Africa among 15–64 years general population, with high prevalence in West and Central Africa (UNODC, 2019), it means that adolescents' likelihood of cannabis/marijuana experimentation in the region would be paramount.

Incidentally, the drug consistently remains the most abused drug by African adolescents compared to alcohol and cigarettes as last-month use in a sample population of 25, 372 school-going adolescents in 9 African countries (Ghana, Mauritania, Benin, Algeria, Namibia, Morocco, Swaziland, and Mauritius) by Peltzer and Pengpid (2018), who reported a prevalence of 4.1%, with highest in Ghana (8.1%) and the lowest in Benin (1.9%).

This viewpoint indicated a substantial shift thereby suggesting an increase compared to a local survey in Ghana, which found a lower prevalence of 2.6 - 7.2% (Doku, 2012) and a decrease in Morocco and Benin, which reported cannabis/marijuana prevalence in Morocco among high school students to be 8.1 (Zarrouq et al., 2016) and 13.9% in Benin (Kpotehouen et al., 2015). The increase in Ghana is not surprising as marijuana/cannabis popularly known in Ghana as “wee” is regarded as the commonly used narcotic drug by adolescents in the country which further reaffirms statistics from the Ghana Narcotic Control Board (NACOB) in 2017 which revealed that adolescents account for 35,000 of the country's 50,000 drug users (Ghana news, 2017).

In a post-conflict country like Libya, where adolescents aged 15-24 constitute about 17% of the general population (Index Mundi, 2016), young adults aged 20-24 (men) were estimated to be responsible for 14% of the country's overall health pressure as a result of illicit drug use (Degenhardt et al., 2016). Whereas, the prevalence of cannabis among young adults in Rwanda was found to be 4.4%, with an average initiation age of 11.4 years (Kanyoni et al., 2015).

Similarly, among South African youths, marijuana continues to be the most widely used illicit drug, particularly among people seeking professional treatment in medical centers as it accounts for 31% of all patients admitted compared to alcohol 20% (SACENDU, 2019). Emphatically, among adolescents aged 20 and below in Western Cape, South Africa who were treated successfully for illicit drug use, over 75% were treated for cannabis/marijuana use compared to 13% treated for alcohol (SACENDU, 2019).

In contrast to the study (SACENDU, 2019), a National Youth Risk Behaviour Survey reported that 12.8% of aged 13-15 years (grade 8-10) students in South Africa had used cannabis/marijuana, of which 9.2% had used it in the past month (Bhana, 2015). Although data on marijuana usage in Zambia and Zimbabwe appear sparse, in a similar school survey in Zambia and Zimbabwe, lifetime cannabis/marijuana prevalence across school-going adolescents was reported in different studies in Zambia to be 37.2% in 2013 (Siziya et al.,

2013), and 3% in 2016 (Mutale et al., 2016), while 9% lifetime prevalence with 13.4% in boys and 4.9% in girls were also reported in Zimbabwe (Rudatsikira et al., 2009).

In Nigeria, which accounts for about 60% of the population of West Africa, 10.8% of its general population (10.6 million) were estimated to have used cannabis in the past year, with an average initiation age of 19 years (UNODC, 2018). Even though cannabis/marijuana use and prevalence are reported across all age groups in the country, the overall past-year use is high among young adult of age 25 - 39 years with a prevalence of 19.3% in age 30-39 years; 14.3%, 25-29 years; 8.1%, 20-24 years; and 3.3%, 15-19 years (UNODC, 2018). The drug also tops the National Drug Law Enforcement Agency (NDLEA) list of narcotics seized in the country (NDLEA, 2016).

On gender bases, just as boys were expected to use more illicit drugs than girls, in Africa the prevalence of past-month cannabis/marijuana use was reported to be higher among boys (4.7%) than girls (3.2%), as male dominance were reported in 6 countries (Algeria, Mauritius, Morocco, Namibia, Swaziland, and Rodriguezs), while female preponderance was only recorded in Ghana (Peltzer and Pengpid, 2018). These preponderances in Africa suggest that, as far as an increasing number of countries in the continent start to look at cannabis/marijuana as the continent's poverty bailout, there will continue to be a growing expectation of the continent's cannabis boom. As a consequence, one possible effect of this boom is an increase in its use by teenagers as a result of increased availability, increased social acceptance, and potential affordability.

## America

In America, cannabis/marijuana use is often reported to vary widely along a spectrum. For instance, according to the Inter-American Drug Abuse Control Commission (CICAD) and the Organization of American States (OAS), last-year cannabis/marijuana use in 2019 varies approximately from 0.5 to 16% in the general population. While the range is even-more broader among secondary school students from below 1% to nearly 32.8% (CICAD and OAS, 2019). In four countries of the region (Chile, Dominica, United States, and Antigua and Barbuda) with cannabis-related findings, its use by grade 8 students was estimated to be 20% or more compared to less than 5% in other countries (CICAD and OAS, 2019).

In addition, as marijuana vaping in North America has become more popular, cannabis/marijuana use is also estimated to be 14% in Canada and the United States and 2% in Mexico, whereas in South America it uses in Chile last year was reported as 14.5%, with Argentina and Uruguay prevalence below 10%. However, in the Caribbean sub-region, general cannabis use in Jamaica

was reported as 15.5%, Barbados 8%, and figures below 1% were also reported in the Dominican Republic, Panama, Paraguay and Ecuador (CICAD and OAS, 2019).

Based on a secondary school survey, Chile recorded a past-year cannabis/marijuana prevalence of over 30% in South America, Uruguay with over 15%, compared to the rates below 5% in Brazil, Paraguay, Bolivia, Guyana, Peru, Venezuela, and Suriname. Among students in the Caribbean, Antigua and Barbuda stood out with a rate close to 25%, then Grenadines, and Dominica and Saint Vincent, with rates approximately 20% (CICAD and OAS, 2019).

Similarly between 2014-2015 in Canada, 16.5% grade 7-12 students testified of cannabis use, of which 5.7% and 26.8% were in grades 7-9 and grade 10-12 respectively (Health Canada, 2016). Whereas in 2018, for every 8 adolescents in the US, 1 of aged 12-17 years (12.5%) were marijuana users compared to 34.8% among young adults of age 18-25 (SAMHSA, 2019). Therefore, cannabis use by school-going adolescents in the region is of particular concern given the growing evidence that cannabis is a drug of dependence, with adverse psychological and other sequelae associated with chronic or extended cannabis usage at a young age. Ultimately, it is reasonable enough to blame the increasing prevalence of cannabis/marijuana among adolescents in the region to the drug being legalized, making it more readily available with little or no legal penalties.

## Asia

Although cannabis/marijuana use in Asia is estimated to be 2%, which is lower compared to other regions, amounting to nearly one-third (54 million) of the estimated global cannabis users live in the continent (Ministry of the Interior and Narcotics Control of Pakistan and UNODC, 2013). On country bases, a household survey in Thailand (2016) estimated 5.8% of aged 12-65 years as cannabis/marijuana users, with about half under 25 years (Manop et al., 2018). In India, among aged 10-17 years, lifetime cannabis/marijuana use was also reported to be 0.9% (Atul et al., 2019); while among age 12-19 years, the illicit drug use was estimated to be around 1.7% in Malaysia (Yusoff et al., 2014).

Contrary to the household findings, the lifetime prevalence of cannabis use in a national school survey was reported to be 1.5% among boys and 0.4% among girls aged 12-19 years in Malaysia (Howard and Ali, 2014). Meanwhile, in a systematic review, lifetime cannabis use among high school and college students aged 18 or younger in Iran was reported to be 5% (Nazarzadeh et al., 2015). Whereas in a sample size of 38,941, school-age adolescents aged 11-18 years from 5 Asian countries (Iraq, Kuwait, Malaysia, Mongolia, and

Vietnam), lifetime cannabis/marijuana prevalence was reported as 0.9%, with variation from 0.6% in Vietnam to 3.2% in Kuwait, and prevalence of last month use as 3.1% in Kuwait, 2.1% in Iraq, 1.1% in Mongolia, and 0.9% in Malaysia (Peltzer and Pengpid, 2017).

Among youths in Saudi Arabia, the substance has also been reported to be the extensively used illicit drug by aged 17-18-years students (Al-Musa and Al-Montashri, 2016) and among aged 15-25 general population of the Arab region (UNDP, 2016). Within the World Health Organization South-East Region, lifetime marijuana prevalence among aged 13-17 years was estimated as Bhutan (12% in 2016), Thailand (5.3% in 2015), Nepal (2.6% in 2015), Indonesia (1% in 2015), and Bangladesh (1.6% in 2014) (WHO, South-East mental health status of adolescents, 2017). Even though, cannabis/marijuana use among Asian youths may seem to be low compared to the Americas, yet, with the Asia-Pacific region accounting for up to 60% of the world's youths. This means that there are more adolescents cannabis or marijuana users in the region than it seems.

## Australia/Oceania

The annual cannabis/marijuana prevalence in the Oceanian regions among 15-64-year-olds is estimated to be around 9.1% with available data from Australia and New Zealand, while little is well-known regarding the trends within the Pacific Island countries and territories (Katrin et al., 2018). Nevertheless, among the predominate countries in the region, lifetime cannabis/marijuana prevalence in New Zealand among aged 14-15 years is reported to have declined between 2012 - 2018 (18.7% in 2012, 13.6% in 2014, 14.1% in 2016 and 14.2% in 2018) (Ball et al., 2020). In contrast, during the same period, the New Zealand Health Survey reports that cannabis use has raised significantly among young adults as past year prevalence increased from 9 to 15%, and from 19 to 29% among 15 to 24 age groups. Thus, making the 15-24 years age groups the highest cannabis/marijuana users in the country (Ministry of Health New Zealand, 2019).

Cannabis is also reported to be the most widely used illicit drug among Australian high school students aged 16-17-years, with its use more prevalent in boys than girls (Guerin and White, 2018). Among the fore-named age groups in secondary schools, cannabis use was reported as 3% for 12-year-olds, 5% for 13-year-olds, 9% for 14-year-olds, 20% for 15-year-olds, 27% for 16-year-olds and 32% for 17-year-olds (Guerin and White, 2018). It may then be concluded that the use of cannabis/marijuana in the region rises as age increases, which indirectly imply that the potential legalization of recreational marijuana/cannabis use in New Zealand will set off a more substantial spread across the region as the country prepares to hold a referendum on marijuana's

legalization.

### Comparative analysis

In providing a global insight into the phenomenon of cannabis/marijuana use during adolescence, it may be concluded that the lifetime prevalence of the drug is a matter of great concern as marijuana or cannabis use is considerably prevalent among adolescents. From the current review, Ghana, South Africa, and Nigeria are countries among others with high cannabis/marijuana use among adolescents in Africa.

However, in 2015, the drug was perhaps more prevalent among European youths as higher figures of above 30% (lifetime prevalence) were reported in the Czech Republic and Spain with France appearing to be where the drug was used most by students in 2016. Nevertheless, the United States has also continued to be the home of cannabis/marijuana use in North America followed by Canada, while the illicit drug use is high among Chilean and Uruguayan adolescents within the South America regions.

Regarding the Caribbean sub-region, Antigua, Barbuda, Jamaica and Dominica are countries with notable high cannabis prevalence among the adolescents' age groups, whereas substantial figures were also recorded among Asian adolescents of Kuwait and Thailand. Despite the lack of appropriate current findings in the Oceanian regions except for New Zealand and Australia, cannabis usage among adolescents in the region arguably may be considered moderate but rises as age increases.

### FACTORS INFLUENCING ADOLESCENTS CANNABIS/MARIJUANA USE

As society advocates and propagandizes the legalization of marijuana/cannabis, adolescents will continue to receive conflicting messages about cannabis, whether it is safe or not. It has always been challenging to tease out a single factor as the cause of adolescents' cannabis/marijuana use. Despite that, distress adolescents are more likely to become regular marijuana/cannabis users compared to those with stable social support. Therefore, different factors play different roles on why adolescents abuse drugs, particularly cannabis or marijuana. These factors range from peer influence, availability of the drugs, to family structure.

The influence of peer pressure during adolescence has long been well-cited as one of the main reasons why adolescents' abuse drugs (Masibo et al., 2013), as adolescents peers have also been identified in most cases as the conduit for other new users to access and use illegal drugs (Alhyas et al., 2015). However, a study among adolescents in Malaysia also found that factors

such as smoking prevalence, alcoholic condition, truancy, absence of social support, and lack of family connectivity and supervising were positively linked to use of drugs (Yusoff et al., 2014). All these forenamed factors to some degree are factors that are influenced by friends, hence, this makes it necessary for parents to pay more attention to the kinds of friends their children hang out with; as friends are more influential during adolescence than parents.

In the political unrest regions of the world, the chaotic political situation and social unrest have been opined to provide a perfect atmosphere for the proliferation of vast amounts of drugs distributed at low rates (Micallef, 2017). Consequently, this availability and affordability of drugs is also a crucial factor that has been reported to influence teenage substance use (McKiernan and Fleming, 2017), as the relationship between lifetime marijuana prevalence and perception of easy accessibility was reported to have a strong correlation (CICAD and OAS, 2019). This thereby adds up to the argument that more cannabis use among adolescents will prevail when various changes are proposed to legalize cannabis because of its medicinal and economic benefits.

Besides the availability and affordability of marijuana, false gratification by adolescents have also been opined to be a factor that influences an adolescent to use marijuana or cannabis. For example, among youths in Africa, cannabis/marijuana is mostly used in the ghetto. In the ghetto, marijuana is mostly referred to as "wee" meaning "all of us". It is perceived as 1) providing a certain degree of emotional connection to users, 2) a stimulant that aids in rational thinking, 3) a mystical herb that protects users from evil, and 4) an antidote that mitigates witches' spiritual operations (Botchway and Prempeh, 2017). Some adolescents' cannabis or marijuana users also use it as a means of coping with boredom (Benschop et al., 2015), or to hinder tensions and frustrations, or in a way of increasing or decreasing the effects of other drugs (Patrick et al., 2016).

Similar to these false gratification, factors such as misleading and other conflicting media messages are reported as factors that influence an adolescent to cannabis in Canada. Youths in Canada do not only perceive cannabis as a drug that is not as harmful as alcohol that prevents or cures cancer and enhances driving ability, but as a substance that is considered as naturally and commonly used, not only by friends but also by adults, thereby interpreting the drug as in-noxious and safe to use (Porath-Waller et al., 2013), just as how other youths in Africa consider marijuana as a substance that does not predispose users to violence unless when used with other drugs or chemical (Botchway and Prempeh, 2017). Regarding this misinterpreted conclusion, Stewart and Moreno (2013) blamed limited studies examining the long-term health consequences of marijuana use as the reason why marijuana is still perceived as harmless and appealing to people than tobacco or other illicit drugs.

Contrary to misinterpreted benefits of marijuana, child maltreatment and social anxiety have both been linked with higher cannabis use among adolescents (Vilhena-Churchill and Goldstein, 2014), as marijuana or cannabis is used by some adolescents as a means of self-treatment for mental health conditions such as depression, trouble concentrating, sleeping difficulties, anxiety and mood disorders (Pedersen et al., 2015).

### **Effects of adolescents marijuana/cannabis use**

During adolescence, the brain is understood to undergo a significant amount of changes including the re-wiring of the neural connections through the elimination of extra synapses that are no more needed. Cannabis use during this period is reported to be a disruptor that disrupts this normal pruning and elimination process through modulation of neurotransmitters and inhibition of microglial processes (Filbey et al., 2015) which also decreases the white matter volume as a result of abnormal connectivity within the brain (Gruber et al., 2014). These changes are reported by (Gruber et al., 2014) to result in the impairment of some cognitive functioning such as increased impulsivity, poor reaction, and increased error in executive functioning.

Similarly, marijuana use during adolescence has also been reported by a large longitudinal school-based study to have associated risk of leading to poor functioning across all domains in school compared to alcohol (D'Amico et al., 2016). Thus, making adolescents who depend on cannabis to have poor academic performance, increased delinquency, mental health challenges, and more academic unpreparedness.

In addition, the most dreadful effect of cannabis/marijuana during adolescence is associated with the risk of developing addiction and psychotic events during late adolescence or adulthood. Evidence indicates that long-term marijuana use leads to addiction and dependence on illicit drugs as 9% of all those who experiment or use marijuana are reported to have become addicted to the substance (Lopez-Quintero et al., 2011). Whereas using marijuana was also associated with underage psychotic experiences including schizophrenia (Mulè et al., 2017).

Besides the effects of marijuana/cannabis to users, authors of previous US studies (Contreras, 2017; Northwest High-Intensity Drug Trafficking Area (NHIDTA), 2016; Berenson, 2019) reported that legalization of medicinal and recreational use of marijuana is associated with organized community cannabis/marijuana offenses such as bullying, assault, theft, and robbery among young adults. This thereby implies that when marijuana or cannabis is legalized or when the substance becomes easily accessible to adolescents, there are high tendencies that crime among adolescents will increase, leading to more likelihood of

adolescents finding themselves in juvenile prisons as crimes are paramount to raise.

### **Prevention and intervention strategies**

According to the World Healthy Data, cannabis is the main reason people seek substance abuse treatment in the world. It is further reported that it accounts for approximately 40, 42, 26, and 16% of all psychoactive substance treatment entries in Africa, South-East Asia, Europe, and the Western Pacific Regions respectively (WHO, 2010). Similarly, cannabis is also reported to be the most frequent psychoactive substance that accounts for treatment entry in most low-income countries of the world (WHO, 2010).

On the prevention of cannabis or marijuana use during adolescence, there are lots of emergence questions on what kind of treatment is effective or necessary in reducing the prevalence of cannabis use during adolescence. The undoubtable and surest way has always been by preventing its availability. However, the changing legal landscape as a result of movements aiming at the legalization of marijuana or cannabis for medicinal and recreational use means its availability will continue regardless. Thus, making attempts at preventing adolescents access to marijuana or cannabis fruitless.

Notwithstanding these challenges, there is evidence to suggest that behavioral preventive interventions that cover the environment, and target indicators have an impact on substance use (WHO, 2016). Therefore according to WHO (2016), interventions that aim at targeting families were reported as likely beneficial strategies (EMCDDA, 2013) because it is more effective compared to youths-only prevention programmes (Foxcroft and Tsertsvadze, 2011), while school-based programmes that integrate social competence and social influence has also been reported to have the potentials of reducing cannabis use and beyond when compared to interventions that aim at controlling (Faggiano et al., 2010).

### **CONCLUSION**

There is persistent evidence to suggest that the increasing legalization of marijuana or cannabis has contributed to the forced belief that marijuana is harmless during adolescence. Despite multiple research findings that have suggested the detrimental consequences of marijuana or cannabis, many still consider its medicinal, recreational, and economical benefits. Thus, discussions on the harmful effects of marijuana as a topic of heated debate are essential for understanding the present scenario.

However, these eye-opening statistics do not only support the need of developing effective holistic

interventions that involve stakeholders but emphasize the need for further monitoring of trends, predictors, and the conflicting media messages that promote and advocate for marijuana legalization across the globe.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **Adolescents' perception of the impact of condom use on sexual behaviours: Evidence from Ghana, a developing country**

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**Adolescence is a critical stage in human life. Adolescents' perception of the impact of condom use on sexual behaviour has been studied in developed countries. However, not much is known about this phenomenon in Ghana. The study investigates the perception of adolescents regarding the impact of condom use on sexual behaviours. Simple random and stratified sampling techniques were employed to select the study respondents. The data were analysed using descriptive and inferential statistics. The study revealed that adolescents' knowledge level about condom use was above average (>2.50). Again, the adolescents' knowledge level about condom use predicted their sexual behaviours ( $\beta = 0.159$ ,  $p=0.000$ ). It is concluded that adolescents possess adequate knowledge about condom use. It is recommended that more stakeholders should be involved in the provision of knowledge on condom use among adolescents in Ghana.**

**Key words:** Adolescents, adolescence, perception, knowledge level, condom use, sexual behaviours, Ghana.

## **INTRODUCTION**

Adolescence is an inevitable stage in human development as it serves as a turning point in the growth and development cycle of every human. It is one of the major stages since it presents many physical and emotional changes (Maqbool et al., 2019). The World Health Organisation (WHO) sees adolescence as the second decade in a person's life, which is characterised by physical and psychological changes coupled with tremendous changes in how a person interacts socially as well as the relationships that are cultivated (WHO,

2009). Lewin (1939) defines adolescence as the transition from childhood to adulthood.

Over the past years research focus has been on sexual behaviour, social media usage by adolescents for sexual and reproductive health (SRH) and sexually transmitted infections (S.T.I) prevention (Adzovie and Adzovie, 2020: Rob et al., 2006; Sieving et al., 2002), and there is extant literature on adolescent sexual behaviour especially in developed countries. For instance the impact of family structure, parent-adolescent relations as well as parental

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monitoring on adolescent sexual behaviour in European countries (Lenciauskiene and Zaborskis, 2008). Pedersen and Samuelsen (2003) conclude that since more adolescents have become sexually active, the resultant effect will be risky sexual behaviour (Slap et al., 2003). In sub-Saharan Africa, even though urban youth and adolescents with higher educational background use condoms, more adolescents are at risk of contracting HIV/STI due to insufficient or unavailability of condoms (Doyle et al., 2012).

Globally, the relevance of the discourse on the impact of condom use among adolescents regarding sexual behaviour cannot be overemphasised. Kalichman et al. (1998) stated that females from low-income communities mostly, do not ask their male partners to use condoms due to the perception that doing so may erupt some violent reactions from their male partners (Jemmott and Hacker, 1994; Thato et al., 2003). Support from parents, personal risk perception as well as self-efficacy contribute to the decision by adolescents in Cameroon to use condoms (Meekers and Klein, 2002).

Issues regarding adolescent sexual behaviour vis-a-vis adolescence are known to be age-long yet many people are believed not to be equipped with the challenges that hover around this period of human development. WHO (as cited in Boamah, 2012) indicates that, adolescence can be a challenging phase in life. People growing up at this stage have the responsibility of identifying themselves in the society they are found. Their youthful vigour predisposes them to a lot of exploration and risk-taking behaviours (Tarrant et al., 2001). These developmental changes compel adolescents to try new things including their sexual urges which eventually lead some adolescents to unavoidable problems. Bingenheimer et al. (2015) indicate that reproductive and sexual health problems attributable to sexual behaviours among adolescents such as early initiation of sex, lack of condom or other contraceptive use, multiple partners, and high risk partners are widespread among adolescents and young adults in sub-Saharan Africa because adolescents within this part of the world are believed to be less knowledgeable about contraceptives. Globally, the lack of useful adolescent sexual health education has brought about the high rates of adolescent-related problems such as unplanned pregnancies and sexually transmitted diseases (United Nations Population Fund (UNFPA), 2007).

According to Bernhardt et al. (2005), the medical and social consequences of adolescent sexual activity are a national health concern for many countries. Kirby and Brown as cited in Kirby (2002) report that the menace of AIDS as well as the threat of other Sexually Transmitted Diseases (S.T.Ds) and pregnancy calls for grave concern. The situation appears to be different in Ghana because culturally, it is almost impracticable for students to be given condoms through school counsellors to prevent sexual-related problems. The Ghanaian culture

frowns upon this act. Although it is unclear whether condoms are given to adolescents in schools, it is possible adolescents may be using condoms due to the inadequacy of sex education in this domain in Ghana. Sexual health promotion including Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome (HIV/AIDS) prevention is most emphasised in Ghana because of religious and cultural values (Takyi, 2011). Adolescents are said to have raging hormones that drive their sexual desires (Doku, 2012). These sexual desires are then dramatized regarding teen sex and seen as a site of danger and risk (Arnett, 2007).

A report by Awusabo-Asare et al. (2017) indicated that SRH education topics are integrated into two core and two elective subjects; but those in the core subjects are limited in scope, and the overall approach emphasizes abstinence. However, teachers who are tasked to teach SRH reported challenges to teaching SRH topics effectively, including lack of time, lack of appropriate skills and inadequate teaching materials. This makes the quest for information on sexuality for adolescents through the school system inadequate (Awusabo-Asare et al., 2017).

Also, in Ghana, it has been documented that about 5000 adolescent girls became pregnant in the Central Region in 2017 (Nabary, 2017). The report corroborates a news report which captures a survey conducted by the National Service Personnel Association (Asiedu-Addo, 2017). The high rate of STDs and unplanned adolescent pregnancies in the Cape Coast Metropolis calls for an investigation into adolescents' perception about contraceptives especially condom use as well as the impact this perception(s) has on adolescent sexual behaviour in the Cape Coast Metropolis.

Generally, the study is aimed at investigating the perceptions of adolescents regarding condom use and its impact on their sexual behaviours. Specifically, the study sought to: find out the knowledge level about condom usage among adolescent students in the Cape Coast Metropolis; assess the impact of condom-use on sexual behaviours of adolescent students; find out how condom use can improve the sexual behaviour of adolescent students; and examine the gender differences in condom use and sexual behaviours of adolescent students. In order to achieve these objectives, the following research questions (RQs) and hypotheses were formulated.

RQ 1. What is the knowledge level of adolescent students in Cape Coast Metropolis about condom use?

RQ 2. What is the impact of the knowledge of condom use on adolescents in the Cape Coast Metropolis' sexual behaviours?

RQ3. How can condom use improve the sexual behaviour of adolescent students in the Cape Coast Metropolis?

**H<sub>1</sub>:** Male and female students will differ in their

knowledge level on condom use.

## LITERATURE REVIEW

Adolescence, adolescents and sexual behaviour discourse is an unending one. Literature relevant to the study has been reviewed under the following headings: adolescents' knowledge level about condom use; condom use and sexual behaviours of adolescents; gender difference in adolescents' knowledge level about condom use; and ways of improving/enhancing sexual behaviours of adolescent students.

The National Association of Social Workers in the United States, according to Gilbert (2001), opined that adolescence denotes the inception of bodily/erotic development and procreative ability in people. It is a stage that is characterized by many developmental changes. According to Larson and Wilson (2004), a thorough understanding of adolescence as a period in human development in society depends on information from various perspectives, including psychology, biology, history, sociology, education, and anthropology. From the above perspectives it is clear that adolescence is viewed as a transitional period between childhood and adulthood. To extend the discussion of transition, Coleman and Roker (1998) are of the view that adolescence is a period of multiple transitions involving education, training, employment and unemployment, as well as transitions from one living circumstance to another. Adolescence is believed to be marked by increased rights and privileges for individuals as a result of developmental changes (Van Den Bos et al., 2015). While cultural variations exist for legal rights and their corresponding ages, considerable consistency is found across cultures. According to Casamassimo et al. (2012), many cultures define the transition into adult-like sexuality by specific biological or social milestones in an adolescent's life. Fields further indicates that, adolescents' sexual socialization is highly dependent on whether their culture takes a restrictive or permissive attitude toward teen or premarital sexual activity.

### Adolescents' knowledge level about condom use

Generally, knowledge level influences perceptions. Speroff and Fritz (as cited in Akpan et al., 2014) report that since 1900, knowledge and application of contraception have been encouraged and promoted and in 1960s, contraception teaching and practice became part of the programme in academic medicine. According to Tarkang and Bain (2015), Sub-Saharan Africa (SSA) remains the region hardest hit by the HIV/AIDS pandemic than any other in the world, largely due to high-risk behaviour and neglect of potential preventive measures. This has led to most adolescents resorting to the use of condoms to prevent the HIV/AIDS canker. Unwanted

pregnancy, sexually transmitted diseases (STDs) and their adverse health consequences among adolescents are widespread public health problems worldwide that calls for the knowledge of condoms (Yazdkhasti et al., 2015). An estimated 19 million new STDs occur each year in the United States of America of which 50% are among persons between the ages of 15 and 24 (CDC, 2008). Hearst and Chen (as cited in Tarkang and Bain, 2015) indicate that the correct or right knowledge and consistent condom use whether male or female, has been acknowledged to be effective towards successful prevention of sexually transmissible infections (S.T.I.s), including HIV/AIDS that come as a result of sexual behaviours. Tarkang and Bain (2015), in Cameroon among adolescents, reveal that majority of the adolescents in Cameroon have appreciable knowledge about condoms and their usage. However, in practice, these adolescents do not use condoms. This may be dangerous because their attitudes may expose them to HIV/AIDS.

Also, Akpan et al. (2014) reveal that currently, the level of awareness and knowledge about condoms as a means of contraception and preventive measure against contracting STDs/HIV has increased among adolescent students in Nigeria. They attest that evidently, 100% of the respondents reported having knowledge about condom and how it is used. However, their findings were attributed to the peculiarity of the demography of respondents (adolescents sampled were from one of the most educated communities in Nigerian). Migosi et al. (2013) reveal that majority of adolescents in secondary schools in Kenya are sexually active and they actively use condoms, hence their knowledge level is above average as the study reveals that adolescents especially, males use condom in order to reduce risks of sexually transmitted infections and unwanted pregnancies. In the Democratic Republic of Congo (DRC), Masoda and Govender (2013) report that 137 (99.0%) of respondents studied knew what condoms were. However, they were of the view that this high knowledge level about condom usage among adolescents sampled could be due to governments and non-governmental organisations' (NGOs) intensive efforts at educating adolescents about condoms, H.I.V and S.T.I.s. Furthermore, most participants (76.0%) knew that condoms prevented HIV/STIs and unwanted pregnancies, and that it was important to use a condom every time that they had sexual intercourse.

### Condom use and sexual behaviours of adolescents

Cates and Stone (as cited in Gilbert, 2001) report that condom use decreases the rate of acquisition of HIV. To corroborate this, Celentano et al. (1998) conclude that incidences of HIV AIDS infection declined among young military men in Thailand as a result of the implementation of '100% condom program'. Also, according to Shafii et

al. (2004), condom use is known to decrease sexually transmitted infections. In furtherance to this, Blake et al. (2003) report that making condoms available and allowing their use in high schools protects sexually active adolescents from contracting STDs. However, Parsons et al. (2000) report that perceived benefits of sex without condom (unprotected sex) better determines the sexual behaviour of late adolescents. From the foregoing, it is evident that the merits of condom use among adolescents far outweigh that of non-usage because it can help adolescents maintain their healthy lifestyles as they continue to grow.

### **Gender differences in adolescents' knowledge level about condom use**

The issue of gender differences in condom use and sexual behaviour seem inconsistent. According to Closson et al. (2018), girls have higher sexual refusal self-efficacy, while boys have higher condom use self-efficacy. In studies measuring Condom Use Self-Efficacy that compared gender differences in South Africa, had higher Condom Use Self-Efficacy compared to boys (Awotidebe et al., 2014; Boafo et al., 2014). However, among 19 analyses measuring CUSE, nine found that boys had higher CUSE than girls (Slonim-Nevo and Mukuka, 2005; Tenkorang and Maticka-Tyndale, 2014), three reported that girls had higher Condom Use Self-Efficacy compared to boys (Louw et al., 2012; Sayles et al., 2006), three found no gender differences in Condom Use Self-Efficacy (Puffer et al., 2012), and four did not report descriptive differences in Condom Use Self-Efficacy by gender (Louw et al., 2012; Njau et al., 2007; Taylor et al., 2007).

Leland and Barth (1992) assert that females are more likely than males to discuss sexuality topics with parents, and they equally engage in sexual intercourse more frequently. In that same study, it was reported that adolescent males are more likely to use birth control during their first sexual encounter, and to use a condom during their last sexual encounter. Furthermore, males knew more about using condoms correctly and their role in preventing sexually transmitted diseases (Leland and Barth, 1992). A study by Prata et al. (2005) in Angola reveals that a larger proportion of males than of females indicated that they had always used condoms with all of their partners in the three months preceding the survey. This synopsis above puts the male adolescents in pole position against female adolescents when it comes to condom usage in sexual behaviours.

### **Ways of improving/enhancing sexual behaviours of adolescent students**

To avoid doubt and the quest not to compound issues

with adolescent development, there is the need for well-thought strategies, well-informed modalities to be put in place to improve and enhance adolescent students' sexual behaviours. Programmes and activities that serve as motivations for adolescents are of great importance to nurturing them against risk-taking sexual behaviours as well as enhancing the way adolescents handle themselves against sexual pressures. According to Kirby (2002), social scientists and educators have proffered a wide variety of explanations for how schools can reduce sexual risk-taking behaviours. To Kirby, educators concerned with adolescent sexual behaviour have suggested that schools should structure adolescent students' time and limit the amount of time that students can be alone and engage in sex. According to Bennell et al. (2002), school-based sex education is an encouraging platform for introducing many adolescents to vital health information and life skills that can avert accidental conditions and sexually transmitted infections (STIs). Shrestha et al. (2013) indicate that although sex education looks important to improving adolescents' sexual behaviours, it is challenged in many jurisdictions, particularly in developing countries like as it is severely controlled by social and cultural taboos on discussing issues related to sex whether in school or home. In a related study, Amponsah et al. (2018) found that school-based sex education is important because majority of adolescent students in the Wa Municipality in Ghana agree that sex education would have a positive effect on their social lives. There is an urgent need for effective strategies to reduce the number of problems adolescents encounter (Ahern and Bramlett, 2016).

Manlove et al. (2015) in their study among American high school students reveal that parent-youth relationship programmes are particularly effective at influencing the sexual behaviours and reproductive health outcomes among adolescents. According to Miller et al. (2001), the important role that parent-adolescent relationships provide includes parental monitoring and parent-adolescent communication as they help influence adolescents' sexual and reproductive health behaviours. According to Ajidahun (2013), parental monitoring during pre-adolescence affects the age at which adolescents start and begin sexual activity. He further states that adolescents who are knowledgeable about sex are more likely to use contraceptives consistently, and are more likely to postpone sexual intimacy. According to Ventura et al. (as cited in Ajidahun, 2013), adolescents who receive counselling regarding sexual behaviour from school or community programmes have a better chance of avoiding pregnancy and other risks connected with sexual behaviours or activity. To Ajidahun, sexual behaviour counselling needs to be a shared responsibility and should not be left in the hands of parents alone. Teachers, professional counsellors and more importantly the society should be involved. According to Germain et al. (2015), young people have a fundamental human right

**Table 1.** Sample size proportions for the selected schools in the Cape Coast Metropolis.

School	Population	Percentage	Sample
Adisadel college	2,064	26.0	117
Wesley girls	2,562	32.0	144
Ghana National College	3,425	42.0	194
<b>Total</b>	<b>8,051</b>	<b>100.0</b>	<b>450</b>

to participate in matters that affect their lives. Meaningful participation is defined as seeking information, expressing ideas, taking an active role in different steps of a process, being informed or consulted on decisions concerning public interest, analysing situations, and making personal choices. Several factors, including age, gender, social and economic class, ethnicity, race, sexual orientation, and HIV status, are key determinants of what role young people see for themselves in society and the ways in which they participate in programs and policies. Arop et al. (2019) opine that care given to adolescents by health professionals in a variety of settings, including communities, schools, and public health and acute care clinics affords them many opportunities to improve adolescents' sexual behaviours.

## METHODOLOGY

This study employed the descriptive survey design. The target population was 20,063 and comprised all Senior High School adolescent students in the Cape Coast Metropolis. The accessible population was 8,051 and comprised three (3) randomly selected schools. A sample of 450 adolescent students (aged between 14-19 years) was used for the study. The sample size was based on a five percent of the accessible population suggested by Ary et al. (2009). In their view, 5 to 20% of a population can serve as an adequate sample for quantitative studies. Two single sex schools (male school and female school) and one mixed school (boys and girls) were randomly sampled for the study. Stratified sampling technique was used to cater for the population differences in as much as comparison between male and female respondents was considered. Finally, respondents were selected to participate in the study using the systematic sampling technique with the help of the students' register. Table 1 presents the various schools and their sample proportions: The instrument used in collecting the data for the study was the 'Sexual Behaviour Inventory' a close-ended type paper-based questionnaire developed by the researchers and scored based on 4-point Likert-type scale. The scale was measured in agreement and disagreement dimensions, where 1=Strongly Disagree, 2=Disagree, 3=Agree and 4=Strongly Agree. The questionnaire had some negative statements, which were reversely scored as 4=Strongly Disagree, 3=Disagree, 2=Agree and 1=Strongly Agree. Out of this, a cut-off point was established following the formula  $[1+2+3+4=20/4=2.50]$ . The questionnaire comprised four sections with 31-items. Section A of the questionnaire had only 1-item measuring gender as a socioeconomic background. Section B of the questionnaire contained 12-items measuring knowledge level on condom use. Section C of the questionnaire contained 11-items measuring effect of condom use on sexual behaviour and section D with 7-items of the questionnaire measured ways in improving sexual behaviours. Pre-testing of the questionnaire was conducted at two senior high

schools (St Augustine's College and Holy Child Senior High School) on 60 students who did not make up the final sample to establish the consistency and reliability of the instrument. In establishing reliability of the questionnaire, Cronbach Alpha was used, where pre-testing and final administration generated reliability coefficients of .75 and 0.71 respectively. The researchers administered the questionnaire themselves and the respondents were informed of the study purpose (oral informed consent), privacy of data collected (with exception of results), assured of their confidentiality in providing information, anonymity of personalities and free will to withdraw from the study for personal reasons. The data gathered in the study were analysed using descriptive (means and standard deviations) and inferential statistics (linear regression, and independent samples t-test) with the aid of Statistical Package for Service Solution (SPSS) version 23. Before this, the data were screened and missing values were not realised. The analysis done was based on a 100% return rate.

## RESULTS AND DISCUSSION

The purpose of the study is to find out the perceptions of adolescents in the Cape Coast Metropolis about the impact of condom use on their sexual behaviours. The results are presented descriptively (means and standard deviations) and inferentially (linear regression and independent samples t-test) after satisfying the assumptions of the analytical tools. The presentation was done based on the researcher's questions and the hypothesis that guided the study.

### **Research Question One: What is the knowledge level of adolescent students in Cape Coast Metropolis about condom use?**

The purpose of this research question was to assess the knowledge level of adolescent students about condom use. To achieve this, means and standard deviations were used to assess the adolescents' knowledge level. The results are presented in Table 2.

As represented in Table 2, the results show that generally, adolescents in the Cape Coast Metropolis have some knowledge about condom use. This can be seen from a mean score which was greater than the test value (2.50). For instance, it was evident that most of the adolescents in the Cape Coast Metropolis are aware that condom is a form of contraceptive that is available for both males and females ( $M=2.96$ ,  $SD=0.948$ ,  $n=450$ ). Also, it was revealed that adolescents in the Cape Coast

**Table 2.** Knowledge level of adolescent students about condom use.

Statements	Test value=2.50		
	N	Mean	Std. D
Condom is a form of contraceptive that is available for both men and women	450	2.96	.948
Condom use prevents the contraction of sexual transmitted diseases	450	2.90	.943
Condom use prevents any unplanned pregnancy related issue in relationships	450	2.86	.993
Condom use amounts to reducing sexual pleasure	450	2.83	.933
During sexual intercourse, condoms can disappear inside the vagina if it strips from the penis	450	2.51	.970
A condom can be used more than once	450	2.18	1.02
Condom use means that one does not trust the partner	450	2.14	.965
Condom use at adolescence indicates that one is involved in an immoral life	450	2.01	.961
Condom use makes sexual intercourse painful	450	2.31	.991
Condoms are same in structure and size for males and females	450	2.25	.994
Regular use of condom affects fertility	450	2.44	.986
Condom use does not offer complete protection against pregnancy and STI	450	2.61	.998
Mean of Means/ SD	450	2.50	.975

Metropolis are aware that condom use prevents the contraction of sexually transmitted diseases ( $M=2.90$ ,  $SD=0.943$ ,  $n=450$ ). These findings confirm that of Akpan et al. (2014) in Nigeria, which revealed that adolescents attested that they knew about condom and how it is used. Conversely, the current study defied the general assertion made by Tarkang and Bain (2015) that Sub-Saharan Africa (SSA) remains the region hardest hit by the HIV/AIDS pandemic due to high-risk behaviour and neglect of potential preventive measures. There may be exceptions to the problem in some countries within the sub-region of SSA because knowledge of condoms may vary geographically.

The results also indicated that most of the adolescents in the Cape Coast Metropolis know that condom use prevents any unplanned pregnancy related issue in relationships ( $M=2.86$ ,  $SD=.993$ ,  $n=450$ ). In another related result, the adolescents specified that condom use reduces sexual pleasure during sexual intercourse ( $M=2.83$ ,  $SD0.933$ ,  $n=450$ ). The adolescents in the Cape Coast Metropolis further demonstrated their knowledge level that condoms can disappear inside a female's vagina when it strips from the male's penis ( $M=2.51$ ,  $SD=0.970$ ,  $n=450$ ). The revelation of the current study seems not different in other studies such as Mucugu et al. (2013) and Masoda and Govender (2013), which revealed adolescents in Kenyan secondary schools were sexually active; hence they use condoms so that they could protect themselves from sexual-related problems. Few of the items scored a mean less than the test value of 2.50, indicating that adolescents in Cape Coast Metropolis disagreed with some statements in the aspect of condom use. For example, they disagreed that one condom can be used more than once ( $M=2.18$ ,  $SD=1.02$ ,  $n=450$ ). In addition, they disagreed that condom use means that one does not trust one's partner ( $M=2.14$ ,

$SD= 0.965$   $n=450$ ) and condom use indicates that one is spoilt or immoral ( $M=2.01$ ,  $SD=0.961$ ,  $n=450$ ). Again, the respondents disagreed that condoms are very painful when used ( $M=2.31$ ,  $SD=.991$ ); it was also disagreed that condoms are same in structure and size for male and females ( $M=2.25$ ,  $SD=0.994$ ). Finally, the respondents disagreed that regular use of condom affects fertility ( $M=2.44$ ,  $SD=0.987$ ); they agreed that condom use does not offer complete protection against pregnancy and S.T.I ( $M=2.61$ ,  $SD=0.998$ ). From the foregoing, it can be concluded that adolescent senior high school students in Cape Coast Metropolis knowledge level about condom use was average as their observed grand mean of 2.50 was similar to the criterion mean of 2.50. Not surprising anyway, indeed, condoms are not reusable; they protect rather than expose people to consequences of promiscuous sexual activities. The current study findings corroborate with Tarkang and Bain (2015) who revealed that majority of Cameroonian adolescents were having appreciable knowledge about condoms and their usage. Similarly, the findings confirm Mucugu et al. (2013)'s study among adolescents, which revealed that majority of the students were sexually active and they actively used condoms, so their knowledge was above average. The respondents' view re-echoed what is known about condoms and their usage.

#### **Research Question Two: What is the impact of the knowledge of condom use on adolescents' sexual behaviours in Cape Coast Metropolis?**

The study sought to determine the impact of adolescents' knowledge level of condom use on their sexual behaviours. To make this possible, standard multiple regression was used for the analysis. Table 3 presents

**Table 3.** Results of descriptive statistics.

Test variable	Mean	SD	N
Knowledge level on condom use	99.44	9.02	450
Sexual behaviour	53.30	6.77	450

**Table 4.** Regression analysis of impact of knowledge level on condom use on sexual behaviour.

Variable	B	SEB	B	R	T	Sig.	R <sup>2</sup>	Ad R <sup>2</sup>	F	P
KLCU	0.377	0.077	0.159	0.197	4.908	0.000	0.079	0.077	38.71	0.000

\*Significant at 0.05 level, <sup>a</sup>Predictor: (Constant), (Knowledge Level), <sup>b</sup>Dependent Variable: Sexual Behaviour.

the results. Table 3 shows the descriptive statistics (means and standard deviations) of the test variables. The results indicated that adolescents' knowledge level on condom use produced the highest mean and standard deviation (M=99.44, SD= 9.02) while sexual behaviour produced the lowest mean (M=53.30, SD=6.77). Deducing from the findings, it is clear that adolescents' knowledge level about condoms and their usage was higher than exhibiting sexual behaviours. However, this has less to offer as whether the knowledge level could predict sexual behaviour, hence further regression observation. Table 4 presents regression results.

Table 4 indicates the result of regression analysis of knowledge level on condom use against sexual behaviour. Symbols interpretations are the unstandardized beta (B), the standard error for the unstandardized beta (SE B), the standardized beta ( $\beta$ ), the t-test statistic (t), the significant value (sig), the ANOVA value (F), the ANOVA p-value (p), the correlation (r), the R square value (R<sup>2</sup>), and the Adjusted R Square value (Ad R<sup>2</sup>). The result shows that knowledge level on condom use (r=.197) has significant positive relationship with adolescents' sexual behaviour. The results of the regression indicated the predictor (knowledge level in condom use) explained 7.9% of the variance (R<sup>2</sup>=0.079, F (2.908) =38.71, p=0.000). It was found that knowledge level in condom use significantly predicted adolescents' sexual behaviour ( $\beta = 0.159$ , p=0.000). The findings presupposed that as one becomes knowledgeable in condoms and their usage, it is likely one might engage in sexual activities. Conversely, this revelation defeats the idea that the availability and use of condoms among adolescents does not increase adolescent sexual activity, rather, condoms protect adolescents from contracting sexually transmitted diseases (Blake et al., 2003).

### Research Question 3: How can condom use improve the sexual behaviours of adolescent students in Cape Coast Metropolis?

To enumerate results for this research question, means

and standard deviations were deemed appropriate for the analysis. Table 5 presents the accumulated results. As illustrated in Table 5, the results give indication that some measures can be used to improve the use of condom on sexual behaviour of adolescent students in the Cape Coast Metropolis. The results, however, showed that some of the measures could be more effective and more conducive to the adolescent students than others. For instance, the adolescent students agreed that adolescents' sexual behaviours can be improved through the use of clinical-based programs that are championed by nurses and other health professionals (M=2.60, SD= 1.06, n=450). The revelation buttressed the fact that health facilities does not only offer services regarding sickness but could go a long to educate adolescents on sexual lives and reproductive health. Therefore, it is not surprising that clinical-based programs provided in a variety of settings could offer opportunities for adolescents to improve their sexual behaviours as suggested by Maria et al. (2017).

They further suggested that adolescents' sexual behaviours can be improved by taking them through sex education (M=2.90, SD= 1.01, n=450). To get more evidence, the adolescent students established that adolescents' sexual behaviours can be improved by encouraging and motivating them to avoid amoral sexual activities and think of school and academics (M=2.85, SD= 1.00, n=450). The adolescent students were also of the view that adolescents' sexual behaviours can be improved by adopting health-based programmes to educate them on the best practices (M=2.71, SD= 0.989, n=450). In fact, sex education can be offered in many ways by many institutions including educational psychologists and counsellors. These professional groups' contribution to adolescent development is unabated because they possess appreciable knowledge about adolescent development and its related stage problems. It is therefore, not surprising that Ventura et al. (as cited in Ajidahun, 2013) assert that adolescents who receive counselling regarding sexual behaviour stood a chance of avoiding sexual-related problems.

In furtherance to the above measures, the adolescent



**Table 5.** Ways of improving sexual behaviours of adolescent students.

Statement	Test value=2.50			Rank
	N	Mean	SD	
Adolescents sexual behaviours can be improved by taking them through sex education	450	2.90	1.01	1 <sup>st</sup>
Adolescents sexual behaviours can be improved by encouraging them to avoid amoral sexual activities and think of school and academics	450	2.85	1.01	2 <sup>rd</sup>
Adolescents sexual behaviours can be improved through programmes that are parent-oriented where parents can engage their adolescents on the consequences of teenage amoral sexual relationships	450	2.78	1.00	3 <sup>rd</sup>
Adolescents sexual behaviours can be improved by counselling them on the value of remaining pious and abstaining from sexual intercourse at their age	450	2.76	.954	4 <sup>th</sup>
Adolescents sexual behaviours can be improved by adopting health-based programmes to educate them on the best practices	450	2.71	.989	5 <sup>th</sup>
Adolescents sexual behaviours can be improved by using adolescent role models in championing their course so that they can learn from such role models	450	2.63	1.02	6 <sup>th</sup>
Adolescents sexual behaviours can be improved through the use of clinical-based programmes that are championed by nurses and other health professionals	450	2.60	1.06	7 <sup>th</sup>
Mean of Means/ SD	450	2.75	1.00	

**Table 6.** Results of independent sample t-test.

Variable	Group	N	Mean	SD	t-value	df	Sig. (2-tailed)
Gender	Male	239	19.39	3.38	0.236	448	0.814
	Female	211	19.31	3.50	-2.965		

Significant at 0.05 level.

students pointed out that adolescents' sexual behaviours can be improved by counselling them on the values of remaining pious and abstaining from sexual intercourse at their age (M=2.71, SD= 0.989, n=450). Measures like adolescents' sexual behaviours can be improved by using adolescent role models in championing their course so that they can learn from such role models (M=2.63, SD= 1.02, n=450). Lastly, the measure that adolescents' sexual behaviours can be improved through programmes that are parent-oriented where parents can educate their adolescents on the consequences of teenage amoral sexual relationships was least approved by the adolescents (M=2.78, SD= 1.00, n=450). The findings can be concluded that in general, adolescent students' knowledge about condoms and their usage can go a long way to improve their sexual behaviours as they continue to grow in societies that allow inter-sexual interaction among people. As revealed by the current study above, the issues are not quite different from what was found in Amponsah et al. (2018)'s study. The study revealed that adolescents agreed when sex education is provided to them, it would have a positive effect on their social lives because they could be trained to manage their sexual desires. Furthermore, the study findings support Manlove et al. (2015) that among American high school students, parent-youth relationship programmes are particularly

effective at influencing the sexual behaviours and reproductive health outcomes among adolescents.

### Research hypothesis

**H<sub>1</sub>:** There are significant differences between male and female students with regard to their knowledge level on condom use.

One of the objectives of the study was to determine the differences between male and female students with regard to knowledge level on the use of condoms. Table 6 presents the results. As depicted, the means and standard deviation give slight indication that male students (Mean= 19.39, SD=3.38, n=239) have more knowledge on the use of condom than female students (Mean=19.31, SD=3.50, n=211). However, a critical look at the *t* and *p*-value showed that no significant difference existed between male and female students [*t* (448) =0.236, *p* = .814, *p*>0.05, n=450, 2-tailed]. The findings refute that of Prata et al. (2005) in Angola, that male students were knowledgeable in condom use than female students. More so, the findings debunked a study finding by Leland and Barth (1992) which states that female students were more knowledgeable in condom use than

male students because they have discussed sexuality topics with parents and engaged in sexual intercourse more frequently.

## CONCLUSIONS AND RECOMMENDATIONS

From the foregoing findings, it can be concluded that the knowledge level of adolescent students in Cape Coast Metropolis on condom use is adequate. The revelation calls for a worry, looking at the volatile and boisterous nature of today's adolescents. In part, the revelation is appreciable but it is likely to propel adolescents to try out sexual activities if care is not taken and proper sex education is not provided for them. These adolescents may mistakenly presume that the use of condoms is 100% for sexual protection; hence, the possibility of adolescent students engaging in unprotected pre-marital sexual relationships cannot guarantee complete prevention of sexually transmitted infections (STIs). Based on this, it can be said that adolescent students' knowledge level in the use of condoms will predict their sexual behaviours. Therefore, it is recommended that stakeholder institutions such as Planned Parenthood Association of Ghana (PPAG), School Counsellors and Education Psychologists guide adolescent students on condom usage as their knowledge level may lead them to practice sexual activities without recourse to potential consequences like sexual infections. The stakeholders' role could be done by educating adolescents on sexuality issues. As adolescents, they keep growing and would need sex education in order to guard against any unplanned pregnancies and sexually transmitted infections/diseases, which may hamper their progress socially and academically regarding sexual relationships. Forging ahead, it is recommended that research works should also focus on curiosity and sexual behaviour among in-school adolescents.

## Implications for counselling

Based on the findings, it is important that school guidance and counselling programmes are encouraged as these adolescents may be vulnerable to social pressures towards sexual activities. Having a functioning guidance and counselling programme in schools will help curtail the dangers of adolescents' sexual exploration. With this, every school needs to be equipped with the right human capital that can offer guidance services to students so that they can be guided as they progress on the growth ladder.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **Stigma and self-efficacy as predictors of intention to seek help among American and Japanese college students**

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**The aim of this study was to examine how people within individualistic and collectivistic cultures differ in their intentions to seek professional mental health help. As such, it was crucial to examine possible predictors of intention to seek help for mental health issues. We explored the cultural differences between American and Japanese students and their intentions to seek help from mental health professionals. A total of 155 undergraduate students from America and 116 undergraduate students from Japan participated in this quantitative study. Participants completed surveys regarding public stigma, self-stigma, self-efficacy, confidence in mental health professionals, and intention to seek help. A 2 × 2 MANOVA was performed to test the hypotheses. The American college students had less public and self-stigma and had more self-efficacy, confidence in mental health professionals, and intention to seek help compared to the Japanese college students. Interventions for eradicating public and self-stigma and increasing self-efficacy are further discussed.**

**Key words:** Mental health, public stigma, self-stigma, self-efficacy, confidence in mental health professionals, intention to seek help, college students, cross-cultural research.

## **INTRODUCTION**

The intention to seek professional mental health help and the stigma surrounding help seeking can vary across cultures depending on specific cultural norms (Mojaverian et al., 2013; Vogel et al., 2017). For instance, individuals in the Eastern world tend to be more interdependent and have encompassing social relationships with each other, with thoughts, feelings, and actions that are contingent on these relationships (Markus and Kitayama, 1991). As such, the act of seeking help outside of these encompassing social relationships may lead to the interruption of interpersonal relationships for individuals

within collectivistic societies (Mojaverian et al., 2013), such as Japan, and collectivism has been found to be negatively associated with having positive, help-seeking attitudes (Sun et al., 2016). Furthermore, people in collectivistic cultures prioritize emotional restraint over emotional expression e.g., discussing mental health issues (Chen et al., 2015).

In comparison, individuals in the western world, such as Americans, tend to be more independent and are encouraged to be autonomous and self-enhancing and place importance on personal identity (Wang and Lau,

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2015; Yıldız and Şimşek, 2016). Moreover, there is less emphasis on considering the ingroup and those close to individualists when making decisions, such as seeking help, and the decision to seek help from mental health professionals may not be influenced by individuals' relationships with others. Indeed, previous researchers have found that Asians and Asian Americans tend to underutilize mental health services (Kikuzawa et al., 2019; Kim and Zane, 2016), while the prevalence of certain mental illnesses is relatively similar between America and Japan (Inaba et al., 2005). Researchers have also found that Asians tend to avoid seeking mental health services and frequently terminate therapy prematurely in comparison to Americans, and they may also delay seeking help in general (Atkinson and Gim, 1989; Han and Pong, 2015). Due to these findings, it is necessary to examine the differences between American and Japanese individuals' intentions to seek professional mental health help.

The purpose of this exploratory study was to examine the cultural differences of public stigma, self-stigma, self-efficacy, and confidence in mental health professionals' abilities between American and Japanese college students. We then considered how these differences influence students' help-seeking intentions. Such investigation is vital since it helps identify effective ways to reach out to many Asian and Asian American individuals who are suffering through mental health struggles without sufficient treatment.

## REVIEW OF RELATED LITERATURE

### Effects of stigma on intention to seek help

Previous researchers have focused on the effects of stigma on attitudes toward seeking, and intention to seek, mental health services (Clement et al., 2015; Corrigan, 2004). In fact, these researchers revealed that stigma was a significant predictor of barriers to seek help. In particular, researchers have revealed that Americans are less concerned about the stigma that comes from others (that is, public stigma) than Japanese individuals are (Mojaverian et al., 2013), and this finding holds true for those seeking help for mental health concerns. Japanese individuals are readily concerned about the results that their actions may bring toward other members of their ingroups e.g., focusing on ingroup harmony (Hui and Triandis, 1986; Su et al., 2015), as actions that go against one's ingroup could be seen as disruptive (Mojaverian et al., 2013). Furthermore, it is considered less appropriate to disclose personal issues in Japan. In a study of personal control and social accommodation, researchers found that choosing to disclose to others is regarded as more appropriate in western (individualistic) cultures compared to eastern (collectivistic) cultures (Ishii et al., 2017).

Corrigan (2004) identified two types of stigma associated with mental health and psychological services: public stigma and self-stigma. Public stigma is the act of discriminating against individuals with mental illness (Corrigan, 2004; Saavedra et al., 2020), and this term is used to describe how the public treats individuals who seek professional mental health help. Mental illnesses and seeking help for them are both widely stigmatized in Japan (Kasahara-Kiritani et al., 2018; Shimotsu et al., 2014). As a result, Japanese students view the disclosure of mental illnesses less favorably than U.S. students do (Masuda et al., 2005). This is possibly due to the negative consequences that could occur from being stigmatized and from being afraid of bringing disharmony to their families or inner circles. In a recent study of Japanese college students, researchers found that reducing public stigma toward mental illnesses in young people could enable them to utilize mental health resources (Koike et al., 2018). Yamawaki et al. (2011) found that more Japanese individuals see mental illness as a weakness compared to those living in individualistic countries. Furthermore, Japanese people accept the belief that having a weak personality causes mental illnesses, a belief that contributes to public stigma in Japan (Yoshioka et al., 2016). Therefore, the first hypothesis is: Public stigma would show greater significant impact on intention to seek help among Japanese participants than among American participants.

Public stigma influences the development of self-stigma, a facet in determining if individuals seek help (Vogel et al., 2007), in individuals with mental illnesses, leading to decreased intention to seek help and limiting the establishment of positive attitudes about oneself (Vogel et al., 2013). Self-stigma is the act of personally internalizing the public stigma being displayed by other people and the stereotypes surrounding mental illness (Corrigan, 2004; Corrigan et al., 2016; Heath et al., 2018; Vogel et al., 2013). Researchers have found that self-stigma results in treatment avoidance and decreased participation in treatment (Corrigan, 2004; Vogel et al., 2013).

In a study with a 90% European American sample (which represents a highly individualistic culture), self-stigma was found to be a more prominent predictor of help-seeking attitudes than public stigma, and self-stigma was negatively related to peoples' attitudes about and intention to seek help from mental health professionals (Vogel et al., 2007). This could partially be due to the fact that people in individualistic cultures are encouraged to promote and maintain their distinctiveness from others (Taylor et al., 2004). Therefore, self-stigma would be an important determining factor to individualistic people regarding seeking help because self-stigma pertains to the self and upholds one's distinctiveness from others. However, since self-stigma is heavily influenced by public stigma e.g., higher public stigma can result in higher self-stigma (Vogel et al., 2006, 2017), it may be a significant

predictor of intention to seek help in both collectivistic and individualistic cultures. Therefore, the second hypothesis is: There would be a significant main effect of self-stigma, while there would not be any significant difference between Japanese and American participants on one's intention to seek help.

### Effects of self-efficacy on intention to seek help

Self-efficacy might be also a significant predictor between collectivistic and individualistic cultures of one's intention to seek help (O'Connor et al., 2014). Self-efficacy is an individual's belief about the competence they have to complete an action for a specific goal (Bandura, 1986), and it is the perception of one's ability to engage in certain behaviors and be successful in doing so (Florer, 2015). Previous researchers have found that adherence to European American values is positively related to self-efficacy (Kim and Omizo, 2005) and is beneficial for one's mental health (Alamilla et al., 2017). Americans have been found to place greater importance on self-efficacy than individuals in collectivistic cultures (Chen et al., 2006; Yıldız and Şimşek, 2016), with general self-efficacy being less important for Japanese individuals (Kiuchi, 2006). While researching three groups of students (European American students, Japanese international students in America, and native Japanese students in Japan), Kiuchi (2006) found that, while all three groups placed priority on independent construals of the self, native Japanese students in Japan ranked independent construals of the self as the lowest in priority and were the least independent of the three groups. This finding suggests that one's self-efficacy may be related to one's independent construal of the self, and other researchers have found that one's independent construal of the self is positively related to self-efficacy (Suryaningrum, 2018). Because collectivistic individuals focus on maintaining both group harmony and their relationships with their ingroups, they may be less interested in constructing an independent construal of the self because their identities rely heavily on their ingroups instead of themselves.

Other researchers have found that Japanese individuals have lower scores of self-efficacy than do Americans and people from other individualistic cultures (e.g., Lithuania), and this research supports the finding that collectivistic cultures yield lower levels of self-efficacy as a whole (Kononovas and Dallas, 2009). Indeed, a previous study showed this finding by using general self-efficacy to measure respondents' overall self-efficacy to predict help-seeking attitudes and behaviors (Corrigan et al., 2006). However, according to Eden and Granat-Flomin (2000), self-efficacy in a specific domain could much more efficiently predict specific domain behavior while general self-efficacy could not. For the purpose of this study, we perceive that it is vital to examine the effect of respondents' self-efficacy to overcome psychological problems with the help of mental health professionals on

their intention to seek help. Therefore, the third hypothesis is: Self-efficacy to overcome psychological problems would show greater significant impact on one's intention to seek help among American participants compared to Japanese participants.

### Confidence in mental health professionals' abilities

When seeking help to overcome mental illness, having confidence in the abilities of mental health professionals is crucial. Researchers have found that the responsiveness of professionals, which was coded as professionals' competence (e.g., ability), was found to be strongly related to peoples' confidence in mental health professionals (Zartaloudi and Madianos, 2010). Zartaloudi and Madianos (2010) also found that people who had friends who previously sought help from a mental health professional were less concerned about mental health professionals' abilities to help them with their own mental illnesses. In their multidimensional model, Fischer and Turner (1970) stated that positive help-seeking attitudes involve the confidence that individuals have in mental health professionals' abilities to help with mental illnesses. Other researchers using this model have found that being a woman and having previously received mental health help are both connected to having positive help-seeking attitudes, including more confidence in mental health professionals' abilities (Masuda et al., 2005). In fact, researchers found that American students reported having more favorable attitudes toward mental health professionals' abilities than did both Japanese and Asian-American students (Masuda and Boone, 2011; Masuda et al., 2005).

Other researchers have found that having an ethnic identity that corresponds to a collectivistic culture is negatively correlated with attitudes of seeking help (Li et al., 2016). Japanese students who previously sought help had more confidence in the abilities of mental health professionals than Japanese students who had never sought help (Masuda et al., 2005). However, even though past experiences with mental health professionals increased Japanese students' confidence in seeking help, American students were still found to be more confident in mental health professionals' abilities than were these Japanese students (Masuda et al., 2005).

## MATERIALS AND METHODS

### Description of the sample/procedure

American participants were recruited from an undergraduate student research pool in the psychology department at a large private university in the Rocky Mountain region in America, and they received research credit that fulfilled course requirements. A total of 155 American students (65 men and 90 women) participated in this quantitative study, and their ages ranged from 18 to 36 ( $M = 20.75$ ,  $SD = 2.96$ ). Among American participants,

87% identified themselves as Caucasian American, 6% Hispanic American, 6% Asian American, and 1% as other. Approximately 80% were single, 18% were married, and 2% were divorced. As for Japanese participants, we invited university instructors who are members of the Japan Mental Health Research Association to assist in collecting responses from Japanese students. Two instructors from one Japanese private university agreed to collect data in their classes on a completely volunteer basis. They all were undergraduate students taking introductory college classes at a large private university in the metropolitan area of Japan. A total of 116 Japanese students (43 men and 73 women) participated in this study, and their ages ranged from 18 to 23 ( $M = 18.53$ ,  $SD = 0.88$ ). All students were unmarried. All participants consented to participate in this study and received research credit that fulfilled a course requirement.

### Translation

All measures and the consent form used in the present study were translated from English into Japanese by a professional Japanese translator. The Japanese versions of these materials were then translated from Japanese into English by a Japanese university instructor fluent in both languages. This individual was not shown the original English version. All materials were evaluated by a bilingual psychologist to make sure that the translations were accurate and that the content was the same.

### Instruments and measurements

Intention to seek counseling for psychological and interpersonal concern (ISCPIC) (Cash et al., 1975). The ISCPIC was measured by the Intent to Seek Counseling Inventory (ISCI), which is a widely used and validated scale that is designed to measure the degree to which respondents are willing to seek help from mental health professionals. The ISCI consists of three subscales: 10 items for "Psychological and Interpersonal Concern," four items for "Academic Concern," and two items for "Drug Use Concern." For the purpose of this cross-cultural study, only the Psychological and Interpersonal Concern subscale was used. The subscale asks respondents about their intention to seek help when they have depression, anxiety, loneliness, or feelings of inferiority. Respondents were asked to rate items on a 5-point Likert scale that ranged from 1 ("Not likely") to 5 ("Very likely"). All 10 items were summed, and higher scores represent greater intention to seek mental health treatment. The Cronbach's alphas of this subscale for Japanese and American data were 0.94 and 0.87, respectively.

Stigma of seeking professional psychological help (SSPPH) (Komiya et al., 2000). The SSPPH contains five items that are designed to assess respondents' perceptions of the societal stigma associated with seeking professional psychological help. Respondents were asked to rate all five items on a 5-point Likert scale that ranged from 1 ("Strongly disagree") to 5 ("Strongly agree"). One example item is "People tend to react negatively to those who are receiving professional psychological help." Participants' scores were totaled, and higher scores denote respondents' perception of greater societal stigma toward seeking professional help. The Cronbach's alphas of this measure were 0.87 for Japanese participants and 0.89 for American participants.

Self-stigma of seeking help (SSOSH; Vogel et al., 2006). This measure was designed to evaluate the degree to which participants self-evaluated for seeking psychological help. It consists of 10 items, such as "My self-confidence would NOT be threatened if I sought professional help." All 10 items were rated on a 5-point Likert scale from 1 ("Strongly disagree") to 5 ("Strongly agree"). One item (the one used as a sample earlier) was reverse scored and

summed with all other items. Therefore, higher scores indicate greater self-stigma for seeking help. The Cronbach's alphas of this measure were 0.31 for Japanese respondents and 0.39 for American respondents. Due to these low reliabilities and to ensure that both Japanese and American data show similar patterns of self-stigma, principal component factor analyses were performed separately for Japanese and American data. In particular, a one-factor solution with varimax rotations was imposed since this measure is designed to assess one component of self-stigma. Items were dropped that did not load highly (greater than 0.50) on one factor, and this analysis resulted in similar patterns in loading for both countries. Four items were dropped, and a total of six items were selected for the final self-stigma scale for this data. Those six items were (a) "I would feel inadequate if I went to a therapist for psychological help," (b) "My self-confidence would NOT be threatened if I sought professional help," (c) "Seeking psychological help would make me feel less intelligent," (d) "It would make me feel inferior to ask a therapist for help," (e) "If I went to a therapist, I would be less satisfied with myself," and (f) "I would feel worse about myself if I could not solve my own problems." One item, (b) was reverse scored and summed to the other five items. Higher scores indicate the strength of respondents' self-stigma toward seeking professional help. The Cronbach's alphas for the final, six-item measure were 0.89 for Japanese participants and 0.82 for American participants.

Self-efficacy to overcome psychological problems with help of mental health professionals (SEOPPHMHP). In a previous study, some researchers used the General Self-Efficacy Scale to measure respondents' overall self-efficacy (Corrigan et al., 2006) to predict help-seeking attitudes and behaviors. However, according to Eden and Granat-Flomin (2000), self-efficacy in a specific domain could much more efficiently predict specific domain behavior, while general self-efficacy could not. Therefore, the SEOPPHMHP was developed for the purpose of this study. The SEOPPHMHP refers to respondents' judgments of their capability to overcome psychological problems successfully with professional help. The SEOPPHMHP contains 10 items and was constructed following the suggestions offered by Bandura (2006) and Lent and Brown (2006). Items for this measure were generated from existing published self-efficacy scales, that is, Career Decision Making Self-Efficacy Scale-Short Form (Betz et al., 1996) and Career Search Efficacy Scale (Solberg et al., 1994). Respondents were asked to rate their degree of confidence in their ability to overcome psychological problems with help from mental health professionals on a 5-point Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). All items were summed, and higher scores represent greater self-efficacy to overcome psychological problems with the help of mental health professionals. The Cronbach's alphas for this measure for Japanese and American participants were 0.89 and 0.81, respectively.

Confidence in mental health professionals (CMHP). The CMHP was created to measure respondents' confidence in mental health professionals in general. It contains five items, and respondents were asked to rate their general confidence in mental health professionals on a 5-point Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). Typical items for the CMHP are "In general, I am (a) 'confident that mental health professionals are competent,' (b) 'confident that mental health professionals are effective,' (c) 'worried that mental health professionals do not have the ability to assist individuals to overcome their problems,' (d) 'confident that mental health professionals have the knowledge and skills to help people effectively', and (e) 'worried that mental health professionals cannot understand peoples' problems.'" Items (c) and (e) were reverse scored and then all items were added to create the CMHP. Therefore, higher scores represent greater confidence in mental health professionals. The Cronbach's alphas for this scale for Japanese and American respondents were 0.77 and 0.83, respectively.

**Table 1.** Dependent and moderator variable means and standard deviations.

Variable	America		Japan	
	Women	Men	Women	Men
Intention	31.31 (9.29)	32.10 (8.07)	28.24 (8.18)	26.07 (11.38)
Public stigma	9.10 (3.80)	9.85 (4.07)	13.28 (3.27)	14.74 (5.19)
Self-stigma	27.40 (6.25)	27.54 (6.21)	28.68 (5.90)	32.07 (8.56)
Self-efficacy	37.36 (5.29)	37.29 (4.57)	31.14 (4.71)	28.07 (9.62)
Confidence	17.07 (93.70)	16.86 (3.45)	17.53 (3.95)	15.18 (2.85)

Intention = Intent to seek counseling for psychological and interpersonal concern; Public Stigma = Stigma of seeking professional psychological help; Self-Stigma = Self-stigma of seeking help; Self-Efficacy = Self-efficacy to overcome psychological problems with help of mental health Professionals; Confidence = Confidence in mental health professionals.

## RESULTS

### Country and gender differences in public and self-stigma, intention to seek help, and self-efficacy

First, we performed a 2 (country) × 2 (gender) MANOVA with country and gender as independent variables and with public stigma, self-stigma, intention to seek help, and self-efficacy as dependent variables. Then, multivariate analyses of covariance (MANCOVA) were conducted to control for respondents' general confidence in mental health professionals.

Means and standard deviations on the measured variables as functions of country and gender are shown in Table 1. Neither marital status nor age predicted intention to seek help in this study either directly or in an interaction with other variables. In line with the hypothesis, there was a significant main effect for country ( $F [4, 263] = 38.02, p < 0.001, r = 0.37$ ). This analysis found no main effect for gender and no interaction effects ( $F [4, 263] = 1.83, p = n.s.$ ;  $F [4, 263] = 1.21, p = n.s.$ , respectively). A follow-up univariate test revealed that Japanese participants tended to hold greater public stigma and self-stigma than did American participants ( $F [1, 269] = 81.37, p < 0.001, r = 0.24$ ;  $F [1, 269] = 12.28, p < 0.001, r = 0.05$ ), respectively. Conversely, Japanese participants tended to hold less intention to seek professional help and less self-efficacy to overcome psychological problems with the help of mental health professionals compared to American participants ( $F [1, 269] = 15.86, p < 0.001, r = 0.06$ ;  $F [1, 269] = 82.93, p < 0.001, r = 0.24$ ), respectively.

Results of a MANCOVA indicated that there were main effects of both country and gender of participants ( $F [4, 262] = 37.29, p < 0.001, r = 0.36$ ;  $F [4, 262] = 2.41, p < 0.05, r = 0.04$ ), respectively. An ANCOVA indicated that even when controlling for confidence in mental health professional, Japanese participants were still likely to hold greater public and self-stigma and had less intention to seek help and self-efficacy in comparison to American participants ( $F [1, 262] = 79.29, p < 0.001, r = .23$ ;  $F [1,$

$262] = 10.71, p < 0.001, r = 0.04$ ;  $F [1, 262] = 15.32, p < 0.001, r = 0.06$ ;  $F [1, 262] = 104.22, p < 0.001, r = 0.28$ ), respectively. As such, the difference in confidence in mental health professionals between Japanese and American participants did not have a significant impact on the difference on the dependent variables between the countries.

One of the main differences between the MANOVA and MANCOVA results was that gender differences became significant after controlling for confidence in mental health professionals. ANCOVA results revealed that public and self-stigma as well as self-efficacy were all significant ( $F [1, 262] = 5.39, p < 0.05, r = 0.02$ ;  $F [1, 262] = 7.00, p < 0.001, r = 0.03$ ;  $F [1, 262] = 5.87, p < 0.05, r = 0.02$ ), respectively. That is, male participants, in general, tended to hold greater public and self-stigma and self-efficacy with the help of mental health professionals than did female participants.

### Effects of public and self-stigma and self-efficacy on intention to seek professional help

All measurements were centered to the means in order to reduce the possibility of multicollinearity influencing the results prior to the analyses (Jaccard et al., 1990). Participants' gender was not part of our hypotheses, but it is included in all of the analyses. Zero-order correlation coefficients for all variables are shown in Table 2. Overall, statistically significant correlations emerged among all the measured variables at  $p < 0.05$  except for the relationship between intention to seek help and public stigma and the relationship between intention to seek help and confidence in mental health professionals ( $n.s.$ ). The correlations among the measured variables that were significant ranged from  $r = 0.182$  to  $r = 0.585$ . To investigate any potential moderators on intention to seek professional help, hierarchical regression analyses were performed. In the first model, country, public stigma, self-stigma, self-efficacy, confidence in mental health professionals, and gender of the participants on intention



**Table 2.** Correlations among all measured variables.

Correlated variable	1	2	3	4	5
Intention	1	-0.299**	-0.455**	0.305**	0.047
Public stigma		1	0.504**	-0.585**	-0.093
Self-stigma			1	-0.532**	-0.182**
Self-efficacy				1	0.148*
Confidence					1

Intention = Intent to seek counseling for psychological and interpersonal concern; Public Stigma = Stigma of seeking professional psychological help; Self-Stigma = Self-stigma of seeking help; Self-Efficacy = Self-efficacy to overcome psychological problems with help of mental health professionals; Confidence = Confidence in mental health professionals. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

**Table 3.** Hierarchical regression analyses of the effect of public stigma, self-stigma, self-efficacy, confidence in mental health professionals, country, and participants' gender on intention to seek help from mental health professionals.

Regression model	$\beta$	$t$	$\Delta R^2$
<b>Step 1: Main effects</b>			
Public stigma	0.01	0.15	
Self-stigma	-0.43	-6.15***	
Self-efficacy	0.02	0.19	0.23***
Confidence	-0.05	-0.86	
Country	0.16	2.35*	
Gender	0.02	0.44	
<b>Step 2: Interaction effects</b>			
Country $\times$ Public stigma	0.28	2.94**	
Country $\times$ Self-efficacy	0.20	2.52*	
Gender $\times$ confidence	0.33	4.94***	0.36***
Gender $\times$ Self-stigma	0.14	2.02*	

Intention = Intent to seek counseling for psychological and interpersonal concern; Public Stigma = Stigma of seeking professional psychological help; Self-Stigma = Self-stigma of seeking help; Self-Efficacy = Self-efficacy to overcome psychological problems with help of mental health professionals; Confidence = Confidence in mental health professionals. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

to seek help were entered. Then, two-way interaction terms were entered in the second model. The results of these analyses are summarized in Table 3.

The results of the first model indicated a main effect of country and self-stigma. That is, Americans tended to show greater intention to seek professional help than did Japanese individuals, and participants who endorsed greater self-stigma toward seeking mental health help were less likely to seek help (Table 3). These main effects grant the further analysis of an interaction effect. As such, all two-way interaction terms were entered for intention to seek professional help in the second model. When the interaction terms were entered, country, self-stigma, country  $\times$  public stigma, country  $\times$  self-efficacy, gender  $\times$  confidence, and gender  $\times$  self-stigma became significant predictors of intention to seek help. To investigate the pattern of the interaction, simple effect analyses were conducted. The results revealed that self-efficacy was a significant predictor in Japan ( $\beta = -0.25$ ,  $p < 0.05$ ) but was not a significant predictor in America ( $\beta = 0.04$ ,  $p = n.s.$ ). The effect of public stigma in America was

small ( $\beta = -0.18$ ,  $p < 0.05$ ), while it was significant in Japan ( $\beta = -0.43$ ,  $p < 0.001$ ). As for the gender  $\times$  confidence interaction, a simple effect analysis revealed that confidence in mental health professionals positively predicted intention to seek help among women ( $\beta = 0.40$ ,  $p < 0.001$ ), while it was a negative predictor among men ( $\beta = -0.25$ ,  $p < 0.001$ ). Furthermore, self-stigma was a significant predictor among men ( $\beta = -0.49$ ,  $p < 0.001$ ) but was not a significant predictor among women ( $\beta = -0.11$ ,  $n.s.$ ).

## DISCUSSION

The purpose of this study was to examine the differences between American and Japanese students regarding intentions to seek help for mental illnesses. We examined the following possible variables that could influence intentions to seek help: public stigma, self-stigma, self-efficacy, and confidence in mental health professionals' abilities.

As hypothesized, public stigma had a greater impact on intentions to seek help for Japanese individuals than for Americans. With this finding, we recommend taking actions to reduce public mental health stigma in Japan. In one systematic review, researchers found that mass media campaigns and interventions for target groups concerning stigma-related knowledge, intended behaviors, and attitudes about mental illnesses helped reduce public stigma toward mental health problems (Gronholm et al., 2017). Other researchers have recommended the following interventions for reducing public stigma: employing mass anti-stigma interventions, improving knowledge about mental health, making available more literature about mental health, implementing educational programs for students, facilitating direct and positive contact with individuals who have mental illnesses, and discrediting cultural myths about mental health (Corrigan et al., 2012; Corrigan and Shapiro, 2010; Crowe et al., 2018; Evans-Lacko et al., 2012; Mak et al., 2014; Parcesepe and Cabassa, 2013; Wong et al., 2018).

Furthermore, online resources (e.g., more online literature about mental health, social support groups), peer services (e.g., people who have experienced the same mental health issues and can provide support), and policy changes to help protect individuals with mental illnesses (e.g., Americans with Disabilities Act), are recommended to help eradicate public stigma (National Academies of Sciences, Engineering, and Medicine, 2016). Implementation of these types of interventions, either alone or simultaneously, within collectivistic cultures such as Japan may help reduce the amount of public stigma individuals within those cultures have toward mental health illnesses and seeking professional help. Overall, it is recommended that interventions address both wide populations and specific target groups, as both help reduce public stigma.

As hypothesized, Japanese individuals had greater self-stigma than Americans. Since there is a strong connection between public stigma and self-stigma (Vogel et al., 2006, 2007), and since Japanese individuals in this study had greater public stigma, greater self-stigma was expected to follow. Moreover, self-stigma was greater for both American and Japanese men than for American and Japanese women. This finding could be explained by gender differences. Previous researchers have found gender differences for intentions to seek help and have reported that men are less likely to seek help than women and even recommend self-care over seeking professional help (Haavik et al., 2017; Nam et al., 2010; Sen, 2004; Pattyn et al., 2015). This difference between men and women could also be due to men having more self-stigma about needing professional help for mental illnesses than women.

Researchers have found that masculinity ideology, masculine norms, and masculine gender-role conflict can discourage men from seeking professional help for mental

health, and these factors ultimately promote avoidant behaviors toward seeking professional help (Addis and Mahalik, 2003; Cole and Ingram, 2019; Levant et al., 2009; Ramaeker and Petrie, 2019). Lynch et al. (2018) focused on barriers to seeking help that arose in a study of men. One theme was “traditional masculine ideals,” and men gave examples including the feeling that seeking help would compromise their masculinity, which was defined by self-reliance and strength. These qualities may be incompatible with disclosing one’s emotions, including negative feelings caused by mental illness, and can result in self-stigma. Another theme that appeared was “personal challenges,” which included examples of communication issues (e.g., difficulty communicating emotions), asking for help and then feeling a personal loss, and the inability to recognize the symptoms that coincide with mental illnesses. Both themes and the reasons listed correspond to masculinity ideologies and masculine gender roles, reflect previous research about men having less intention of seeking help than women, and can be classified as influencing self-stigma.

To reduce self-stigma, it would first be important to decrease public stigma since both types of stigma, while separate constructs, are highly related. To combat self-stigma, interventions have been implemented that are similar to the interventions used in reducing public stigma. Yanos et al. (2015) reviewed different psychoeducation programs to correct individuals’ current knowledge about mental health and to counteract any myths about the topic. Furthermore, cognitive techniques were reviewed, such as Narrative Enhancement and Cognitive Therapy (NECT). Yanos et al. (2015) discussed that NECT can promote learning the skills necessary to help individuals identify having self-stigma and combat their own negative thoughts and beliefs about mental health. Other researchers have designed and implemented programs such as the “Ending Self-Stigma” program (Lucksted et al., 2011). This program is nine weeks long and is tailored for individuals with serious mental illnesses. It helps reduce individuals’ self-stigma about mental illnesses, and individuals in this program have shown increases in personal strengths (Lucksted et al., 2011). Corrigan and Rao (2012) reiterated the importance of ensuring that individuals know that having self-stigma is not their fault, but rather a product of society. Corrigan and Rao (2012) emphasized utilizing the “Ending Self-Stigma” program and encouraged using it alongside peer support programs to reduce self-stigma. We recommend implementing the aforementioned interventions, based on their previous trials, to reduce the prevalence of self-stigma and to increase intentions to seek help.

In line with our hypothesis, Japanese individuals had less self-efficacy than Americans to overcome a mental illness with the help of a mental health professional. This could be due to the Japanese culture of showing modesty in public situations. In a study about accepting credit for

prosocial behavior, American children viewed modest lies less favorably than Japanese children, and Japanese children were in favor of not taking credit for their prosocial behavior (Heyman et al., 2010). Other researchers reported that Americans tended to show self-enhancing tendencies, while Japanese individuals only showed self-enhancing tendencies when no reasons were present for making an evaluation (Yamagishi et al., 2012). Fu et al. (2011) found that people in individualist cultures were generally accepting of taking credit for doing good deeds while people in East Asian collectivistic cultures were not. Since Japanese populations have high levels of modesty, it could be that they are less likely than individualistic populations (e.g., Americans) to think they have the self-efficacy to overcome a mental illness. Therefore, Japanese individuals may attribute the success of overcoming a mental health illness to a professional instead of to themselves.

Gupta and Kumar (2010) found that self-efficacy was positively correlated with both mental health and one's mood and suggested that self-efficacy be increased to help with one's mental health status. Moreover, self-efficacy beliefs may determine if and how people motivate themselves (e.g., how one motivates oneself to seek professional help) and how they think about themselves (Andersson et al., 2014). This motivation, or lack thereof, may determine whether an individual seeks help. We recommend that motivation, along with one's moods and attitudes about mental health and professionals, be increased among individuals for self-efficacy to be increased. Furthermore, diminishing stigma and improving mental health literacy among individuals could help increase self-efficacy (Andersson et al., 2014). Other researchers have recommended peer support services, structured interventions (e.g., motivational interviewing, cognitive behavioral therapy for treatment seeking), and creating health care services that ensure individuals seeking help know that treatment for mental illnesses is a positive opportunity (Johnson and Possemato, 2019).

In the present study, Japanese individuals had less intention to seek help than Americans did, and if individuals exhibited self-stigma, they were less likely to seek help. This finding can be attributed to this study's findings that Japanese individuals have more public and self-stigma and less self-efficacy than Americans. To increase the intention to seek help, we recommend using the aforementioned interventions to decrease public and self-stigma and increase self-efficacy.

In addition to men having greater self-stigma, public stigma, and self-efficacy than women, there was also a gender difference in their confidence in the abilities of mental health professionals and in their intentions to seek help. Having more confidence in the abilities of mental health professionals was a positive predictor of seeking help for women, whereas it was a negative predictor for men. Although there were no hypotheses for gender, this

finding corresponds to previous findings that women tend to have more positive attitudes toward seeking help (Efstathiou et al., 2019; Leong and Zachar, 1999; Masuda et al., 2005), and this could lead to women having more confidence in the abilities of mental health professionals.

### Limitations

There were some limitations to this study. All participants were college students, making these findings difficult to generalize to other age groups and settings. Moreover, there was a larger than average number of Caucasian participants in the American sample, making it difficult to generalize these findings to other races and ethnicities. However, this study had strong internal reliability within the measures used.

### Conclusion

Many people never seek help, or they fail to fully engage themselves when they are seeking help for mental health illnesses (Corrigan, 2004). This could be due to the prevalence of high public and self-stigma and low self-efficacy. Therefore, multiple interventions have been suggested to reduce both public and self-stigma and to increase self-efficacy. Many studies on these topics have not been longitudinal, and future researchers should conduct longitudinal studies to examine the lasting effects of these interventions. It is further necessary to monitor any changes, both short and long term, in the societies in which these interventions are utilized. Interventions should also address gender differences when examining whether interventions increase intentions to seek professional mental health help. Interventions such as mass media campaigns, targeting groups with large amounts of mental illnesses, and programs like "Ending Self-Stigma" should be considered and implemented in areas such as schools, colleges, and the broader public to help reduce both public and self-stigma around seeking help for mental health problems.

### CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **Psychological distress as a predictor of quality of life among selected Filipino school personnel**

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**This study examined the possible relationship and predictive impact of psychological distress on the quality of life among school personnel. 112 personnel employed in a private school in Caloocan City, Philippines, who participated in the study and completed the Depression Anxiety Stress Scale (DASS 21) and World Health Organization Quality of Life (WHOQOL-BREF) survey. The occurrence of severe to extremely severe level of depression, anxiety, and stress were 28.58, 17.85, and 8.93%, respectively, thus the school personnel obtained a satisfied rating in all the domains of quality of life. Correlations between the quality of life dimensions and psychological distress facets are significant at the 0.05 level of significance except for the correlation between social mean score and total anxiety score. The respondents in terms of their gender experienced the same level of psychological distress and quality of life while single employees appeared to have higher levels of depression and stress symptoms compared to married ones. Furthermore, a regression analysis demonstrated that a significant variance of 44.7% (psychological), 40.2% (physical), 8.9% (social), and 26.9% (environmental) factors of quality of life can be accounted for by psychological distress. In addition, depression and stress symptoms are found to be significant predictors of psychological and physical health, while stress is a significant predictor of social relationships and environmental domain. Therefore, the results highlight the implications for an intervention program in relieving the psychological distress and improving the quality of life among school personnel.**

**Key words:** Depression, anxiety, stress, quality of life.

## **INTRODUCTION**

The first Mental Health Act or Republic Act 11036 has been passed in the Philippines and has a goal to create an access to comprehensive and incorporated psychological health services while protecting the rights of an individual suffering from mental health disorders as well as the members of his family (Lally et al., 2019). According to the World Health Organization and

Department of Health (2012), there is only 1 doctor for every 80,000 Filipinos and one of the explanations for this scarcity of trained professionals is the emigration to English speaking countries and this shortage is magnified in the field of psychiatry wherein there is an estimated over 500 psychiatrists in practice (Lally et al., 2019), thus the ratio for mental health workers in the Philippines is 2

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to 3 per 100,000 population (WHO and Department of Health, 2006). Given this scarcity of mental health professionals, more research is needed to understand the association between employees' mental health and quality of life so that the schools can continually evaluate the needs of their employees, as well as review and improve the efficiency of their existing mental health programs.

School personnel have many life's experiences, and their mental health is one of the determinants that may affect their working condition, hence affecting their life's satisfaction.

Mental health is defined by the World Health Organization as an individuals' state of well-being where an individual realizes his potential, able to work productively and fruitfully, can cope with the normal stresses of life, and has the capacity to contribute to the community (WHO, 2014). Thus, mental health should be given importance because it has a great impact on an individual's physical health (Ohrnberger et al., 2017). The health of the mind is as essential as the health of the body. Furthermore, psychological distress is generally referred to depression, anxiety, stress, and mental health related problems (Dyrbye et al., 2010) which had been acknowledge as a vital outcome measure in several working environments (Bennett et al., 2004). In particular, stress is an inescapable part of an employees' working life. Stress in work is a risk factor to a personnel's health which also affects their motivation and productivity. Working conditions that are poor are crucial precursor to stress and may lead to depression or anxiety (Plaisier et al., 2007).

The working environment, changes on how the work should be done, and the mechanism of organizational behavior would definitely intensify the level of job stress among workers that could affect their physical and mental health (Dollard et al., 2003). There are many studies done especially in the education setting, that support staff, lecturers, and administration personnel have experienced job stress from moderate to high level (Jing, 2008). Also, teaching has been widely acknowledged as a profession susceptible to stress and teachers are suffering from stress related illnesses such as anxiety and depression. Stress is defined by Tripathi and Sharma (2013) as a state of psychological and physiological disparity between situational requirement and the individual's ability to meet those requirements. This comprises not only the work pressure that exceeds a person's capability to cope but also unutilized individual's knowledge and abilities which can transpire in a wide variety of work circumstances, but often gets worse, when there is little support from supervisors and colleagues being felt by personnel and having little or control over work and how they can cope with its pressures and demands (Ahsan et al., 2009).

Likewise, academic staffs face more problems in their work because of an increasing competition among other

schools that cause an increase in duties, demands, work overload that could lead to more stress and affect their physical or mental health as well as satisfaction (Ahsan et al., 2009). Stress at work takes place when there is an imbalance between the demands of work and the individual's capacity to carry out the said demands (Kaur, 2011). It was also found that stress is a predictor of mental health (Toussaint et al., 2016). In addition, there is an evidence of the significance of stress in the development of anxiety and depression symptoms (Hammen et al., 2009) where stress increases anxiety which in turn heightens depression (Ghorbani et al., 2008). This implies that psychological distress-namely depression, anxiety, and stress-are closely associated to each other (de Rooij et al., 2010).

Researchers have found out that stress in the academe can have a positive and negative effect if not properly managed (Smith, 2002 as cited in Ukwai et al., 2013). In terms of work performance, career stress has a negative impact on the person and organizational commitment and individuals may be sick because of their unhealthy lifestyle (Cartwright and Cooper, 2002). A high level of stress is also related to relationships, resources, communication, control, job security (Tytherleigh, et al., 2005), overload and work life imbalance (Association of University Teachers, 2003). Furthermore, work life is one of the important parts of the daily lives of an employee which also causes a great deal of stress. A study conducted by Ofoegbu and Nwadiani (2006) found that sources of stress among non-academic staff include irregular salary payment, school interruptions and strikes, lack of instructional facilities, high cost of living, office accommodation, campus militancy, underfunding education, and lack of annual leaves.

Meanwhile, depression is a common mental disorder that manifests the general symptoms: depressed mood, disturbed sleep, loss of interest, feelings of guilt, low energy, and poor concentration (WHO, 2009) that negatively affect how an individual think, feel and also act (Parekh, 2017). An individual with depression might also present symptoms of anxiety which is a form of psychological and physiological problems that stimulate the fight or flight sensation as a right response to fear (Joshi, 2013) and this feeling of tension is combined with worries thoughts and physical changes (American Psychological Association, 2019).

In addition, another factor that is related to mental health is the quality of life. According to the World Health Organization, quality of life refers to an individual's perception of their position in life in the context of value systems and culture in which they live and in relation to their standards, expectation, goals and concerns (WHO, 1998). The quality of life is not only limited to the psychological and physical health but also environmental and social status which can considerably contribute to the function of a person (Barcaccia et al., 2013). Studies showed that those individuals who are having lower

quality of life are those who are suffering with mental health concerns (Connell et al., 2012). The following are the factors experienced by those individuals with mental health problems that contributed in lowering their quality of life: low self-esteem and confidence, lack of control, diminished activity, sense of hopelessness, demoralization, sense of not being part of society, distress, choice, and autonomy (Connell et al., 2012).

Quality of life and mental health problems of school personnel are concerns that need to be addressed since it is crucial for the learning of their students. It should be given a priority since their profession is very challenging and difficult one. They cannot do their task well if they have poor mental health. These can have an adverse effect in their life especially with their overall well-being, which includes their everyday physical, behavioral, emotional, and cognitive functioning. There are three theoretical anchorage of this study, namely Aaron Beck's cognitive theory and model of depression, Michael Eysenck's theory of anxiety and Hans Selye's stress general adaptation syndrome. The present research concentration is anchored on the premise that reducing psychological distress can improve quality of life. With these, we hypothesized that faculty members have a higher prevalence of psychological distress than support staffs. On the other hand, support staffs have a higher occurrence of quality of life compared to faculty members. Also, we hypothesized that there is a negative relationship between psychological distress and quality of life among school personnel and depression, anxiety and stress predict the respondents' quality of life.

There is dearth of local literature that focuses on the psychological distress of personnel because the studies were focused on the students' mental health and their psychological well-being and seldom school personnel were considered priority. The result of this present research would enable to provide a thorough literature on the mental health and quality of life that would allow institutions to provide mental health programs for employees as a preventive measure to reduce further mental health issues and concerns. Furthermore, the findings will serve as a framework in proposing an intervention program for school personnel.

## METHODOLOGY

### Research design

This study make used of a descriptive correlational design. The relationship between psychological distress-anxiety, stress, and depression and quality of life was ascertained. Further, we explored the predictive-value between psychological distress and quality of life among Filipino school personnel.

### Participants

Convenience sampling was used in the study and a total of 112 out of 143 employees in a private school in Caloocan City voluntarily

participated in the study wherein more than half of which are females (58.93%) and close to half are males (41.07%) with mean age of 31.40 (SD = 10.04). Close to three-quarters of them (68.75%) are faculty members and a third are staffs (31.25), while three-quarters of them are single (68.75%) and only a third (31.25%) are married. In consideration of educational attainment, majority of the participants finished tertiary education (75%), only one employee finished secondary education (.89%), less than a quarter obtained Masters Degrees (22.32%) and a small percentage of faculty members acquired PhD degrees (1.79%).

## Instruments

The Depression Anxiety Stress Scales (DASS 21) is a standardized tool that has 21 items. It is a self-report questionnaire (Lovibond, 2004) that will measure the severity of core symptoms of depression, anxiety and stress; and often used in many countries (Sinclair et al., 2012). The DASS 21 contains depression scale with items related to low positive effect, hopelessness, devaluation of life, self-deprecation and inertia. The anxiety scale includes items, such as automatic arousal, feelings of fear, physiological hyperarousal, and panic attacks; and stress scale contains items like: tension, impatience, difficulty in relaxing, irritability, agitation, and over reactivity to stressful events (Gomez et al., 2014). Answers are reported using a four point Likert scale (0-3) wherein a score of 0 indicated an item "did not apply to them", and a score of 3 which means the item "apply most of the time" (Beiter et al., 2015). A measure of general distress and three orthogonal dimensions -depression, anxiety and stress- means there is a good stability of measure, internal consistency, convergent, divergent validity, and good criterion oriented validity (Bottesi et al., 2015). The internal consistencies (Cronbach's alpha) were high, an overall scale ranging from 0.70 and stress subscale ranging to 0.88. Meanwhile the scores on each of the three sub-scales, and the combinations of two or three of them were able to detect the common psychological distress such as depression and anxiety, with a sensitivity of 79.1% and a specificity of 77.0% at the optimal cut off of >33 (Tran et al., 2013). The DASS 21 has a clearer structure than the original version (Ronk et al., 2013), has the same factorial structure with clinical and non-clinical samples (Mahmoud et al., 2010; Sinclair et al., 2012) and the psychometric properties meet across different cultures (Oei et al., 2013; Taouk, 2001). Moreover, it is suitable for 18 years old and above (Mahmoud et al., 2010). In the present study, DASS 21 has a high level of internal consistency with the Cronbach alphas of 0.89 (depression), 0.81 (anxiety), 0.82 (stress) and 0.93 for the total scale.

## World Health Organization Quality of Life (WHOQOL-BREF)

The 2nd portion of the survey is a shortened version of WHOQOL-100 and widely used for generating quality of life profile. It is a self-report questionnaire that contains 26 items categorized in four domain scores wherein each scored from 5 point likert scale. The domain scores are not averages; they are the sum total score for each question within the domain. There are seven items for physical domain (e.g., "How satisfied are you with your capacity to work?"), six items for psychological (e.g., "How often do you have negative feelings such as blue mood, despair, anxiety or depression?"), three items for social relations (e.g., "How satisfied are you with the support you get from your friends?"), eight items for environmental domain (To what extent do you have the opportunity for leisure activities?) and there are two general questions that evaluate the overall quality of life and physical health.

Meanwhile, there are also two items that are examined separately: question 1 asks about an individual's overall perception



of quality of life and question 2 asks about an individual's overall perception of his or her health. Also, there are three questions (3, 4 and 26) that are negatively phrased and are scored reversely. The domain scores are scaled in a positive direction wherein the higher the scores signify a higher quality of life (WHO, 1998). Multiplying the mean by 4 is used to transform the WHOQOL-BREF scores into longer form WHOQOL-100. For the analysis done, mean score for the domains are used. Transformation to a 0-100 scale was not done since comparison to WHOQOL-100 is not needed. Mean score is used so that comparison between the domains are done, removing the effect of unequal number of items per domain when using the sum. The Cronbach's alpha in a study conducted by Teles et al. (2014) was 0.82 which can be interpreted as high which is consistent with the result of the current study wherein it acquired a high internal consistency for the total domain with the Cronbach's alpha of 0.91 which is beyond the acceptable level. The scale for interpreting the computed mean scores of the WHOQOL-BREF was adapted from Sunga, 2019. Also, the WHOQOL-BREF domains has an acceptable level of internal consistency with the Cronbach alphas of 0.77 (psychological), 0.72 (physical), 0.60 (social), while environmental acquired 0.82 which can be interpreted as very good level of internal consistency. According to Ursachi et al. (2015), a general accepted rule is that  $\alpha$  of 0.6-0.7 signifies an acceptable level of reliability while 0.8 or greater implies a very good level.

### Procedure

A letter was sent to the school administrator, stating the request to conduct a study among school personnel. Permissions were obtained from the school personnel working in a private school to take part in the research, and it was inquired through a request letter. A total of 112 out of 143 respondents participated in the study. They were informed about the nature, purpose, and benefits of the study. Informed consent was also secured prior to data collection. Likewise, voluntary participation was considered in this research study and the principles of confidentiality of the information of the respondents were employed. Moreover, it was made certain that no harm was inflicted to the participants. The data gathered were used for research and academic purposes only. After everyone filled out the form, the first test, which was DASS 21 questionnaire, was distributed. They had 15 minutes to answer the first test. Participants were reminded to take their time in answering the test, and that there were no wrong or right answers. Next, they were asked to answer the second survey test, the WHOQOL-BREF. They were given another 15 minutes to finish the test. The data was analyzed using SPSS 21.

### RESULTS

Each research question was answered using statistical analyses. A 0.05-level of significance was used for all analysis, unless otherwise stated. Table 1 shows the mean and standard deviation of the scores from the three DASS-21 subscales. In particular, faculty members garnered a higher mean score on depression, anxiety and stress compared to the support staffs. Generally, the mean score in the stress subscale is slightly higher than the two other subscales, and at the same time, scores are less dispersed under the said subscale having the smallest standard deviation. Depression ( $M = 13.00$ ;  $SD = 8.96$ ) fall under mild severity level, anxiety ( $M = 13.20$ ;  $SD = 8.23$ ) fall under moderate severity level while and stress ( $M = 13.55$ ;  $SD = 7.88$ ) fall under normal severity level.

To supplement the summary statistics previously discussed, the counts of the severity among faculty and staffs for each subscale are tabulated. In particular, faculty members are classified having severe to extremely severe symptoms of depression (31.16%), anxiety (22.07%) and stress (10.39%) subscale while the staff garnered 22.86% for depression, 8.57% for anxiety and 5.71% for stress. The faculty members acquired higher scores in psychological distress compared to staffs.

Generally, in the depression subscale, more than a quarter of the respondents are categorized as being Normal (33.04%), Mild (6.25%), Moderate (32.14%), Severe (14.29%) and Extremely Severe (14.29%) severity rating. Furthermore, anxiety subscale results revealed that less than a half of them falling as Normal (43.75%), Mild (20.54%), Moderate (17.86%), Severe (10.71%) and Extremely Severe (7.14%). Moreover, stress subscale results indicated that more than a half of the respondents are categorized as Normal (56.25%), Mild (25.00%), Moderate (9.82%), Severe (8.04%) and Extremely Severe rating (0.89%) (Table 2).

Table 3 shows the significant difference between the average physical mean scores of faculty and staff is observed at the 0.05 level of significance ( $t(110) = -2.133, p = 0.035$ ). Psychological, social and environmental mean scores are found to be comparable across respondent type. For all respondents, the highest mean score observed is for the psychological domain while the lowest mean score observed is for the environmental domain. It is also noteworthy that the faculty members are satisfied with their psychological health ( $M=3.70$ :  $SD=0.60$ ), physical health ( $M=3.50$ :  $SD=0.55$ ), social relationships ( $M=3.76$ :  $SD=0.79$ ), while the environmental factor ( $M=3.49$ :  $SD=0.60$ ) garnered the lowest mean score among all the domains which can be interpreted moderately satisfied. Meanwhile, the staffs are satisfied in all the domains of the quality of life namely psychological health ( $M=3.86$ ,  $SD=0.50$ ), physical health ( $M=3.73$ ,  $SD=0.49$ ), social relationships ( $M=3.67$ ,  $SD=0.56$ ), and environmental ( $M=3.50$ ,  $SD=0.49$ ). In general, the respondents are satisfied with their psychological health ( $M=3.75$ ,  $SD=0.57$ ), physical health ( $M=3.57$ ,  $SD=0.54$ ), social relationships ( $M=3.73$ ,  $SD=0.72$ ), and environmental domain ( $M=3.50$ ,  $SD=0.57$ ). An independent sample t-test was performed in order to determine if there was a significant difference in the level and intensity of experience of the variables, namely, depression, anxiety, and stress as components of psychological distress and psychological, physical, social and environmental factors as components of quality of life among the participants when grouped according to gender and civil status. No statistically significant difference was found between male and female personnel in psychological distress factors as presented in Table 4. Also, when it comes to quality of life, there is no significant difference between males and

**Table 1.** Descriptive statistics of actual scores of the three DASS-21 subscales.

Variable	Respondent type			t(110); p-value	Descriptive interpretation
	Faculty	Staff	Total		
Total depression score	Mean	13.53	11.83	0.932; p = 0.353	Mild
	Standard deviation	9.05	8.78		
Total anxiety score	Mean	14.29	10.80	2.109; p = 0.037	Moderate
	Standard deviation	8.31	7.63		
Total stress score	Mean	14.23	12.06	1.360; p = 0.177	Normal
	Standard deviation	7.97	7.58		

Depression: 0-9 Normal; 10-13 Mild; 14-20 Moderate; 21-27 Severe; 28+ Extremely Severe. Anxiety: 0-7 Normal; 8-9 Mild; 10-14 Moderate; 15-19 Severe; 20+ Extremely Severe. Stress: 0-14 Normal; 15-18 Mild; 19-25 Moderate; 26-33 Severe; 34+ Extremely Severe.

**Table 2.** Summary of severity of the three DASS-21 subscales (Count and Percentage).

Variable	Respondent Type						
	Faculty		Staff		Total		
	Count	Percent	Count	Percent	Count	Percent	
Depression score severity level	Normal	24	31.17	13	37.14	37	33.04
	Mild	6	7.79	1	2.86	7	6.25
	Moderate	23	29.87	13	37.14	36	32.14
	Severe	12	15.58	4	11.43	16	14.29
	Extremely severe	12	15.58	4	11.43	16	14.29
	Total	77	100	35	100	112	100
Anxiety score severity level	Normal	28	36.36	21	60.00	49	43.75
	Mild	16	20.78	7	20.00	23	20.54
	Moderate	16	20.78	4	11.43	20	17.86
	Severe	12	15.58	0	0.00	12	10.71
	Extremely severe	5	6.49	3	8.57	8	7.14
	Total	77	100	35	100	112	100
Stress score severity level	Normal	40	51.95	23	65.71	63	56.25
	Mild	20	25.97	8	22.86	28	25.00
	Moderate	9	11.69	2	5.71	11	9.82
	Severe	7	9.09	2	5.71	9	8.04
	Extremely severe	1	1.30	0	0.00	1	0.89

females observed for the average mean scores of the quality of life domains. For female respondents, the highest average mean score observed is for the social domain while the lowest average mean score is for the environmental domain. For male respondents, the highest average mean score observed is for the psychological domain while the lowest is still for the environmental score.

Comparing by marital status, a significant difference between the average total depression score and the average stress score of married and single individuals is observed. Average total anxiety score is found to be

comparable in terms of marital status. Table 5 shows that on average, those who are single have higher levels of depression ( $M = 14.23$ ,  $SD = 9.08$ ) than those who are married ( $M = 10.29$ ,  $SD = 8.19$ ). This difference was significant,  $t(110) = -2.197$ ,  $p < 0.05$ ; the effect is medium-size ( $d = 0.46$ ). Similarly, those who are single are more stressed ( $M = 14.57$ ,  $SD = 8.15$ ) than those who are married ( $M = 11.31$ ,  $SD = 6.84$ ). This difference is also significant,  $t(110) = -2.057$ ,  $p < 0.05$ , and the effect is medium-size ( $d = -0.42$ ). Thus, no significant difference is observed for the average mean scores of the four quality of life domains when compared with marital

**Table 3.** Summary table on the respondents' four quality of life domains.

Variable		Faculty	Verbal Interpretation	Staff	Verbal interpretation	Total	Verbal interpretation	t(110); p-value
Psychological mean score	Mean	3.70	Satisfied	3.86	Satisfied	3.75	Satisfied	-1.357; p = 0.178
	Standard deviation	0.60		0.50		0.57		
Physical mean score	Mean	3.50	Satisfied	3.73	Satisfied	3.57	Satisfied	-2.133; p = 0.035
	Standard deviation	0.55		0.49		0.54		
Social mean score	Mean	3.76	Satisfied	3.67	Satisfied	3.73	Satisfied	0.644; p = 0.521
	Standard deviation	0.79		0.56		0.72		
Environmental mean score	Mean	3.49	Moderate	3.50	Satisfied	3.50	Satisfied	-0.056; p = 0.956
	Standard deviation	0.60		0.49		0.57		

Scale for interpreting the computed mean: 4.50 - 5.00 = Very satisfied / Extreme amount/Completely; 3.50 - 4.49 = Satisfied/Very much/Mostly; 2.50 - 3.49 = Neutral/Moderate amount/Moderately; 1.50 - 2.49 = Dissatisfied/A little/Seldom 1.00 - 1.49 = Very dissatisfied/Not at all.

**Table 4.** Independent samples t-test for gender.

Variable			Gender			t(110); p-value
			Female	Male	Total	
Total depression score	Mean		12.70	13.43	13.00	-0.427; p=0.670
	Standard deviation		9.55	8.13	8.96	
Total anxiety score	Mean		14.15	11.83	13.20	1.478; p=0.142
	Standard deviation		8.59	7.58	8.23	
Total stress score	Mean		13.67	13.39	13.55	0.181; p=0.857
	Standard deviation		7.94	7.88	7.88	
Psychological mean score	Mean		3.73	3.77	3.75	-0.356; p=0.722
	Standard deviation		0.64	0.47	0.57	
Physical mean score	Mean		3.50	3.68	3.57	-1.793; p=0.076
	Standard deviation		0.58	0.46	0.54	
Social mean score	Mean		3.75	3.71	3.73	0.267; p=0.790
	Standard deviation		0.71	0.75	0.72	
Environmental mean score	Mean		3.47	3.54	3.50	-0.616; 0.539
	Standard deviation		0.58	0.55	0.57	

p < 0.05; Male = 46; Female = 66; df = 110.

status. For married respondents, the highest average mean score observed is for the social domain while the lowest average mean score observed is for the environmental domain. For single respondents, the highest average mean score observed is for the psychological domain while the lowest average mean

score is still for the environmental domain.

Correlation analyses were used to examine the relationship between psychological distress factors and aspects of quality of life. As hypothesized with the current study, the results of the analysis yielded a significantly negative correlation between psychological distress and

**Table 5.** Independent-samples t-test for civil status.

Variable		Marital Status			t(110); p-value
		Married	Single	Total	
Total depression score	Mean	10.29	14.23	13.00	-2.197*; p = 0.030
	Standard deviation	8.19	9.08	8.96	
Total anxiety score	Mean	11.03	14.18	13.20	-1.901; p = 0.060
	Standard deviation	7.35	8.47	8.23	
Total stress score	Mean	11.31	14.57	13.55	-2.507*; p = 0.042
	Standard deviation	6.84	8.15	7.88	
Psychological mean score	Mean	3.77	3.74	3.75	0.225; p = 0.822
	Standard deviation	0.57	0.58	0.57	
Physical mean score	Mean	3.66	3.53	3.57	1.186; p = 0.238
	Standard deviation	0.43	0.58	0.54	
Social mean score	Mean	3.90	3.65	3.73	1.716; p = 0.089
	Standard deviation	0.71	0.72	0.72	
Environmental mean score	Mean	3.51	3.49	3.50	0.189; p = 0.850
	Standard deviation	0.60	0.56	0.57	

\* =  $p < 0.05$ ; Single = 77; Married = 35; df = 33.

**Table 6.** Pearson's correlation of psychological distress and quality of life.

Correlation	M	SD	Psychological	Physical	Social	Environmental
Depression	13.00	(8.96)	-0.648*	-0.575*	-0.226*	-0.465*
Anxiety	13.20	(8.23)	-0.473*	-0.537*	-0.184	-0.355*
Stress	13.55	(7.88)	-0.597*	-0.603*	-0.290*	-0.495*

\*p-value<0.05, n = 112 for all computed correlations.

quality of life as shown in Table 6.

Furthermore, depression, a psychological distress factor, has a strong negative relationship for both psychological ( $r = -0.648$ ,  $p < 0.05$ ) and physical health ( $r = -0.575$ ,  $p < 0.05$ ) which means that as depression levels increased, employee's psychological and also physical health decreased. Unlike the first two domains of quality of life, the environment ( $r = -0.467$ ,  $p < 0.05$ ) showed a moderate negative association with depression. Comparably, as depression levels increased, environmental interactions decrease, as well. However, for social relationships, a weak negative correlation was obtained ( $r = -0.226$ ,  $p < 0.05$ ). This entails that being dissatisfied with the social relationships of employees is linked to the occurrence of depression symptoms.

Anxiety, another factor of psychological distress also has a negative correlation with different aspects of quality

of life. The negative relationship between anxiety and two domains of quality of life such as psychological health ( $r = -0.473$ ,  $p < 0.05$ ) and environmental ( $r = -0.355$ ,  $p < 0.05$ ) were moderate. Similar to results with the depression factor, the negative association between anxiety and physical health was strong ( $r = -0.537$ ,  $p < 0.05$ ). The results signify that the more anxious the employees are, the more that their quality of life decreases.

Moreover, scores on stress were also negatively correlated with scores on quality of life. The findings showed a strong negative relationship between stress and psychological scores ( $r = -0.597$ ,  $p < 0.05$ ) and physical health ( $r = -0.603$ ,  $p < 0.05$ ). Consistent with the results of depression and anxiety scores on social relationships, there is a weak negative correlation between stress and social relationships ( $r = -0.290$ ,  $p < 0.05$ ). Inverse relationships between stress scores and

**Table 7.** Psychological distress factors predicting quality of life.

Variable	Psychological Mean Score				Physical Mean Score				Social Mean Score				Environmental Mean Score			
	$\beta$	SE	t	p-value	$\beta$	SE	t	p-value	$\beta$	SE	t	p-value	$\beta$	SE	t	p-value
Intercept	4.368	0.084	52.295	<0.001	4.170	0.082	50.892	<0.001	4.074	0.135	30.116	<0.001	3.982	0.095	41.778	<0.001
D (EV-1)	-0.030	0.007	-4.208	<0.001	-0.016	0.007	-2.273	0.025	-0.002	0.011	-0.187	0.852	-0.014	0.008	-1.749	0.083
A (EV-2)	0.004	0.008	0.439	0.661	-0.009	0.008	-1.076	0.284	0.011	0.013	0.810	0.419	0.008	0.009	0.905	0.367
S (EV-3)	-0.021	0.010	-2.049	0.043	-0.021	0.010	-2.092	0.039	-0.034	0.016	-2.067	0.041	-0.030	0.011	-2.665	0.009
<b>F(3,108)</b>	29.054	<0.001			24.171	<0.001			3.537	0.017			13.273	<0.001		
<b>R<sup>2</sup></b>	0.447				0.402				0.089				0.269			

D = Depression; A = Anxiety; S = Stress; EV = Explanatory Variable (Psychological Distress); DV = Dependent Variable (Quality of Life);  $p < 0.05$ ;  $n = 112$  for all analysis.

environmental scores were also moderate ( $r = -0.495$ ,  $p < 0.05$ ).

Multiple linear regression analysis was done to explore the predictive capability of the psychological distress facets scores in relation to the quality of life domain (mean) scores. Furthermore, using the enter method, it was found that depression, anxiety and stress explained a significant amount of variance in the following values of the psychological health ( $F(3, 108) = 29.054$ ,  $p < 0.05$ ,  $R^2 = 0.447$ ), physical health ( $F(3, 108) = 24.171$ ,  $p < 0.05$ ,  $R^2 = 0.402$ ), social relationships ( $F(3, 108) = 3.537$ ,  $p < 0.05$ ,  $R^2 = 0.089$ ), and environmental factor ( $F(3, 108) = 13.273$ ,  $p < 0.05$ ,  $R^2 = 0.269$ ).

Table 7 reveals that the total depression score ( $\beta = -0.030$ ,  $t = -4.208$ ,  $p < 0.05$ ) and total stress score ( $\beta = -0.021$ ,  $t = -2.049$ ,  $p < 0.05$ ) are found to be significant predictors of psychological mean score. In predicting physical mean score, total depression score ( $\beta = -0.016$ ,  $t = -2.273$ ,  $p < 0.05$ ) and total stress score ( $\beta = -0.021$ ,  $t = -2.092$ ,  $p < 0.05$ ) are found to be significant predictors while only the total stress score ( $\beta = -0.034$ ,  $t = -2.067$ ,  $p < 0.05$ ) is found to be a significant predictor of social mean score. Likewise, only total stress

score ( $\beta = -0.030$ ,  $t = -2.665$ ,  $p < 0.05$ ) is found to be a significant predictor of environmental mean score. The fitted model has an R-squared value of 0.269, which means that 26.9% of the variability observed in social mean score is accounted for by the fitted model. Although this is better than the model for social mean score in terms of explained variability, it still lags behind the model for physical mean score and psychological mean score.

## DISCUSSION

The findings of the study confirm the hypothesis that there is a significant negative relationship between psychological distress and quality of life. The results of the study revealed the factors of psychological distress that predict the quality of life of school personnel in Caloocan City specifically depression symptoms predict psychological and physical health while stress symptom predicts all the domains of quality of life. In the area of industrial-organizational psychology, work stress is a response to stimuli in a job that leads to negative effect to the people who are

exposed to them (Muchinsky, 2007). The psychosomatic and mental disorders are prevalent among teachers as well as tension, fatigue, headache, and exhaustion (Scheuch et al., 2015). Teachers can develop depression (Shetageri and Gopalakrishnan, 2016) as psychological consequence of stressors at work (Chen et al., 2015). Further, there is a high level of psychological distress during professional careers (Samaranayake et al., 2014).

The prevalence of severe to extremely severe depression, anxiety and stress were 28.58, 17.85, and 8.93%, respectively among Filipino personnel. Likewise, the psychological distress such as depression, anxiety and stress are not clinical indicators of any asymptomatic disorders but these were from the normal school personnel. Psychological distress is not only limited to the Filipino personnel. For instance, Leung et al. (2009) found out that there is a prevalence of psychological distress among Hong Kong teachers, the rate in terms of severe to extremely severe symptoms of depression, anxiety and stress were 12.3, 30.3, and 38.6% correspondingly, while Bannai et al. (2015) reported that 47.8% among male and 57.8% female teachers in Japan

are experiencing psychological distress.

Based on the quality of life, the present study showed that the faculty members and staffs are satisfied with all the domains of the quality of life except for the environmental factor wherein the faculty members acquired a moderately satisfied rating. Generally, the school personnel obtained a satisfied rating in all the domains. The results gathered revealed a higher satisfaction rating compared to the local study investigated by Sunga (2019). Both male and female commonly experience the same level of psychological distress and quality of life and showed that there is no significant difference in the experience of psychological distress among school personnel based on gender. Studies carried by Ofoegbu and Nwadiani (2006) and Ismail and Noor (2016) showed that stress level is significantly experience by lecturers and academician irrespective of their gender. This is mostly attributable to the fact that Filipino personnel including faculty members and staffs work under the same environmental conditions and there are no exemptions of roles in terms of work or task assignments.

Meanwhile, the major stress symptoms among academic staff are poor concentration, tiredness, headaches and career stress symptoms, which causes job satisfaction and anxiety (Ukwayi et al., 2013). The psychosomatic and mental disorders are prevalent among teachers as well as tension, fatigue, headache, and exhaustion (Scheuch et al., 2015). The teaching profession appeared to have increased risk of poorer mental health that could lead to mental health problems as compared to other jobs (Kidger et al., 2016).

The numerous responsibilities and roles played by the school's personnel leads to increase in the significant level of stress. Also, the teaching profession is not only physically challenging but also mentally, as the teacher utilizes a great deal of energy in everyday work in the classroom in addition to his family and personal commitments (Kaur, 2011). It was found out that teaching was one of the most stressful professions in a study conducted to assess occupational stress across 26 occupations (Cooper et al., 2005). This occupational stress is ascribed to teachers work load such as planning of lessons, developing curriculum, organizing activities, managing extra-curricular activities, providing information, supervising classes, maintaining discipline and records, administering time tables, covering for teachers absences and shortages, evaluating and assessing students' performance, motivating students in terms of actions and words (Mehta, 2013) that reduces quality of life and overall physical and mental well-being (Kaur, 2011), risk factor for depression and anxiety (Ferguson et al., 2012; Yang et al., 2011) which harm the teacher's capacity to function at work (Borrelli et al, 2014).

As regards to marital status, those who are single appeared to have higher levels of depression and stress

symptoms compared to married ones. The result is consistent with the reports presented by Mayo Clinic (2008) which indicates that unmarried women showed at a greater risk for depression. Married individuals have significantly better mental health than unmarried individuals (Palner and Mittelmark, 2002).

Researchers have found out the following factors that contributed to the stressors of the faculty members: decreased job satisfaction (Reevy and Deason, 2014), work-life imbalance (Rafeeq et al, 2015), work overload and lack of school funding and support from administration and colleague (Gupta et al., 2015), increased number of students to teach (Jamison and Enrera, 2015) which contributed increased anxiety and depression (Veena et al., 2016), feelings of inefficiency to work, and career growth dissatisfaction (Bulatevych, 2017). Furthermore, the stress that being experienced by teachers can also be linked with their work performance. It also revealed that stress can be one of the factors that affect a teacher, particularly in terms of teaching performance to their students (Zekaj, 2015).

This current study showed that psychological distress is inversely correlated with quality of life except for the correlation between social mean score and total anxiety score which acquired the same results in the study investigated by Rusli et al. (2008). This means that an increase in the psychological distress leads to the decrease of quality of life among the respondents on the following factors: social relationships, physical health, psychological and environmental domains. Specifically, depression and anxiety in the workplace are frequently linked with stress and studies showed that psychological distress are related also to poor quality of life (Chen et al., 2006; Diehr et al., 2006).

Correlations between the quality of life dimensions and psychological distress facets are significant at the 0.05 level of significance except for the correlation between social mean score and total anxiety score. Worth noting is that all variables exhibited a negative linear correlation that ranges in magnitude between moderately weak to moderately strong. This connotes that being dissatisfied with the quality of life domains is associated to the occurrence of psychological distress.

There are also studies that revealed the association between quality of life and mental health. In terms of physical health, fatigue was correlated with depression (Shetageri and Gopalakrishnan, 2016) and poor physical health was associated with depression (Besse et al., 2015) while good physical health was linked to good mental health (Bogaert et al, 2014). Quality of life implies how individual needs are met, the extent of satisfaction or dissatisfaction in several aspects of life (Costanza et al., 2007), and considered as a compound and multi-dimensional concept (Theofilou, 2013) which embedded in social, physical and cultural context (Naz et al., 2016).

Moreover, the depression and stress are found to be significant predictors of psychological and physical

health, while stress is a significant predictor of social relationships and environmental domain. The results of the study agree with the findings of Rusli et al. (2008) which exposed that lower stress predicts higher perception of the quality of life. A study among teachers revealed that they relate their quality of life with professional and personal satisfaction. The following are the needs that teachers viewed to have a quality of life: stable relationship, good salary, owned a house but also meeting the needs in the workplace, accessibility, peace in the family and finances, security and physical health (Hunger et al., 2016). Further, many of these literatures acknowledge the attention from institution and school administrators to monitor and evaluate the needs of their personnel. The present research study conforms with the findings of the existing studies on the relationship between psychological distress and quality of life which strengthens the recommendation for an intervention program for school personnel for them to have a sound mental health for better quality of the life as well as good work performance.

## CONCLUSION AND RECOMMENDATION

The main purpose in undertaking the correlation research study is to develop an intervention program in order to address the adverse effects of psychological distress to quality of life among school personnel. Based on the results, the researchers concluded that a negative correlation between psychological distress and quality of life was noted which explicates that as the level of psychological distress namely depression, anxiety and stress increases the quality of life specifically psychological health, social relationships, physical health and environmental domain decreases.

It is recommended that an intervention program will be provided among school personnel by focusing on equipping their knowledge and skills in battling the distress such as depression, anxiety and stress. With the said intervention program, the perceived psychological distress is reduced and the school personnel quality of life in terms of physical, social, psychological and environmental factors will be expected to improve. Mental health is a global issue, it is experienced by developed and developing country, traditional or modern country and no community is immune with this kind of problem. There is also a paucity of publish researches among Filipino personnel, thus it calls for further investigation and urges the need for an intervention program to mitigate the mental health problems among school personnel.

## LIMITATIONS OF THE STUDY

This study is not without limitations even though it had found out the correlation and predictive-value of

psychological distress to quality of life among teachers and support staffs. The main limitation is that our respondents are limited from a private school only. The study was conducted in a single institution; hence, findings of the study would only be applied to them as well as the recommendation. Generalizability of the findings may not be evident to larger groups of school personnel. The researcher acknowledges the need for larger participants that may come from different schools or a nationwide study, if possible, may also be executed for a larger scope and to allow school personnel from different regions to have an equal representation of their current conditions. Thus, personnel living in urban areas might have different responses on the variables as compared to those personnel living in the rural areas.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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*Full Length Research Paper*

# **Reliability Generalization (RG) of the Counseling Center Assessment of Psychological Symptoms (CCAPS)**

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**Due to an increased usage of college counseling centers in the treatment of mental health concerns, it is imperative that centers implement appropriate assessments of psychological symptoms. We examined the Counseling Center Assessment of Psychological Symptoms (CCAPS), which was designed as a routine instrument to assess a range of mental health symptoms. Proper assessment and reporting of reliability are essential before one can meaningfully interpret assessment outcomes. This study employed a meta-analytic technique, Reliability Generalization (RG), to examine reporting practices, and analyze the reported CCAPS reliability estimates. Additionally, reported CCAPS reliability estimates were analyzed in order to assess diversity variables, which can affect the measurement of psychological symptoms and distress. Only 22% ( $N = 12$ ) of the 54 total research studies reported reliability estimates for the CCAPS. Most studies cited a previous source and others simply noted that the measure was “reliable” (66%;  $N = 25$ ). More information is needed for subscale reliability since the current CCAPS Cronbach’s alphas ranged from fair to excellent ( $> 0.60 - > 0.80$ ). An increase in reliability reporting is needed to examine the CCAPS’ use in various sample populations. Implications for reliability reporting standards are discussed.**

**Key words:** Reliability Generalization, Counseling Center Assessment of Psychological Symptoms (CCAPS), reliability reporting, meta-analysis.

## **INTRODUCTION**

College and university counseling centers worldwide serve thousands of students annually. Counseling centers have made significant changes over time to meet the growing demand for support. It was at Princeton University, in 1910, that the first established mental health services for US students became available (Barreira and Snider, 2010; Kraft, 2011). Princeton

University, as well as the universities and colleges to follow, were all heavily influenced by the “mental hygiene” movement, which began in 1909 (Barreira and Snider, 2010; Kraft, 2011). Bridges (1928) defined the mental hygiene movement as being “concerned with the prevention of mental disease, mental defect, delinquency, and the many milder forms of social maladjustment and

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inefficiency which are the sources of so much unhappiness and discontent” (p.1). Although the mental hygiene movement was pivotal in moving college mental health treatment forward, actual on-campus counseling centers were quite rare. University and college counseling centers became more common on college campuses in the 1940s (Barreira and Snider, 2010). The aims of these counseling centers followed suit with the goals of the mental hygiene movement, which was highly focused on primary (e.g., awareness, education, and outreach) and secondary (e.g., intakes, assessment, triage, screenings, and brief therapies) forms of intervention and prevention rather than tertiary interventions (e.g., crisis services, group therapies, inpatient care, and long-term therapies). Since the inception of university and college counseling centers, the goals at the outset have been to provide prevention-based mental health education and basic mental health care with the intended goals for students to include academic and vocational success.

Due to the increased utilization and subsequent rapid growth of college counseling centers over the years, it has become evident that university and college counseling centers’ goals have changed from merely addressing basic mental health concerns and academic achievement to addressing more acute complex mental health concerns and pathology (Eichler and Schwartz, 2010; Lipson et al., 2015; Oswalt et al., 2020). For example, Lipson et al. (2015) reported “roughly one-third of undergraduates exhibit significant symptoms of a mental health problem, such as depression, generalized anxiety, or suicidality” (p. 388). Lipson and colleagues’ (2015) study on college students’ mental health utilized a large sample that consisted of 43,210 undergraduates from 72 US colleges and universities. In this study, utilizing the Patient Health Questionnaire – 9 (PHQ-9) (Kroenke and Spitzer, 2002; Kroenke et al., 2001) and the Generalized Anxiety Disorder scale – 7 (GAD-7) (Spitzer et al., 2006), results revealed that 18.2 and 10.1% of the population had a positive screen for depression and anxiety, respectively. The study also revealed that 7.8% endorsed thoughts of suicide and 16.5% engaged in non-suicidal self-injury (Lipson et al., 2015). Recent research has shown that suicide ranks as the second most common cause of mortality in college students behind accidental injury (Turner et al., 2013).

A recent report published by the American Psychological Association entitled *Stress in America: Generation Z* (2018) highlighted results from APA’s twelfth annual survey aimed at better understanding the sources of stress in individuals’ lives as well as strategies for coping with stress. Findings from the survey indicate that Generation Z’s (that is, those born between the mid 1990’s and 2000’s) average reported stress level (5.3) was higher than the overall average, with Millennials (those born between the early 1980’s and mid-1990’s) reported the highest average (5.7), and Generation X

(those born between the early to mid-1960’s and early to mid-1980’s) reported 5.1 (on a scale from 1 to 10, where “1” is “little or no stress” and “10” is “a great deal of stress”). Conversely, Boomers (those born between 1946 and 1964) reported stress levels well below the average (4.1) as did older adults (3.3). Results from the survey focused on individuals from Generation Z, especially those between the ages of 15 and 21. Results indicate that individuals from Generation Z were more likely to report their mental health to be fair or poor. Millennials and those from Generation X similarly reported fair or poor mental health, whereas less than one in ten Boomers and one in five older adults considered their mental health as fair or poor. Interestingly, Generation Z individuals reported they received treatment or therapy from a psychologist or other mental health professional or were currently receiving treatment (37%). In addition, Generation Z adults, aged 18 to 21, indicated they experienced stress in the form of depression or sadness (58%), lack of interest, motivation, or energy (55%), or feeling anxious (54%). Generation Z individuals also reported lying awake at night due to stress (68%) or eating too much or eating unhealthy foods (58%). In this report (APA, 2018), it was clear that younger generations were significantly more likely to have received treatment with more than one-third of Generation Z (37%) and Millennials (35%) reporting they had received such help, and are most representative of today’s college populations.

Many campus counseling centers are in high demand due to the aforementioned increase in students seeking mental health treatment. As a result, a majority of counseling centers have adopted session limits or stepped-care models with students. Given that treatment in college counseling centers is most often brief, appropriate assessment of psychological symptoms must be reliable, accurate, and succinct. Oswalt et al. (2020) suggest that centers may need to adjust their standard practice to incorporate brief screening programs as part of treatment in order to better assess students’ mental health concerns. Brief screenings in mental health treatment have been shown to help with diagnostic clarification, treatment planning, and therapeutic outcomes (Groth-Marnat and Wright, 2009). Therefore, using a brief instrument that measures college students’ psychological symptoms accurately is of paramount importance.

### **Counseling center assessment of psychological symptoms (CCAPS)**

The current literature surrounding measures tailored specifically to assessing college students’ psychological symptoms is quite sparse. A review of the literature indicates that the Counseling Center Assessment of Psychological Symptoms (CCAPS; Locke et al., 2011) is one of the most commonly used measures in studies

assessing college students' psychological symptoms and, as such, is the primary focus of this study. The CCAPS was developed at the University of Michigan in 2001 and has since been translated from English into five different languages (that is, Simplified Chinese, Traditional Chinese, Japanese, Thai, and Spanish). The CCAPS was most recently normed on a sample of 448,904 students seeking counseling services at various colleges and universities across the United States (Center for Collegiate Mental Health, 2019).

The CCAPS has a 62 – item and an abbreviated 34 – item version. On both versions of the instrument, students are asked to rate items on a Likert-type scale with a range of 0 “not at all like me” to 4 “extremely like me” (Locke et al., 2011). The CCAPS – 62 has a total of eight subscales that measure domains including Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Family Distress, Hostility, and Substance Use. The 62 – item version also has a Distress Index which is a global measurement of a student's overall psychological distress. Locke et al. (2011) found that the CCAPS – 62 demonstrated strong convergent validity as evidenced by significant correlations between the subscales and their associated referent measures (i.e., Depression and Beck Depression Inventory; Generalized Anxiety and Beck Anxiety Inventory; Social Anxiety and Social Phobia Diagnostic Questionnaire; Academic Distress and Student Adaptation to College Questionnaire; Eating Concerns and Eating Attitudes Test; Substance Use and Alcohol Use Disorders Identification Test; Hostility and State - Trait Anger Expression Inventory - 2; Family Distress and Self-Report Family Inventory). The initial alpha coefficients established by Locke et al. (2011) were 0.781 for Academic Distress, 0.811 for Family Distress, 0.823 for Social Anxiety, 0.846 for Generalized Anxiety, 0.853 for Substance Use, 0.863 for Hostility, 0.883 for Eating Concerns, and 0.913 for Depression, which ranged from acceptable to very good. In a sample of participants within the United Kingdom, Broglia et al. (2017) reported “good” reliability estimates ranging from  $\alpha = 0.81 - 0.89$  for all subscales. Meanwhile, Ratanasiripong et al. (2015) conducted research translating the CCAPS into a Thai version and reported reliability estimates for the total CCAPS  $\alpha = 0.91$ , and subscales ranging from  $\alpha = 0.66 - 0.87$ .

The CCAPS – 34 has a total of seven subscales that measure domains including Depression, Generalized Anxiety, Social Anxiety, Academic Distress, Eating Concerns, Hostility, and Alcohol Use (Locke et al., 2012). The 34 – item version also has a Distress Index. However, the CCAPS – 34 discarded the Family Distress subscale and also re-named the Substance Abuse subscale to Alcohol Use, as all items in this subscale are concerned solely with alcohol use. During the development and validation of the CCAPS – 34, researchers utilized the same referent measures as they

did when testing convergent validity of the CCAPS – 62. Results revealed similar findings in that all subscales had significant correlations with their referent measure, thus revealing adequate convergent validity (Locke et al., 2012). Internal consistency for each subscale established by Locke et al. (2012) was 0.760 for Academic Distress, 0.796 for Social Anxiety, 0.820 for Generalized Anxiety, 0.854 for Hostility, 0.869 for Alcohol Use, 0.871 for Eating Concerns, and 0.892 for Depression, and ranged from acceptable to good.

Both the CCAPS – 34 and the CCAPS – 62 assess for suicidal ideation and homicidal ideation. This is assessed with one item on both instruments using a Likert – type scale with a range from 0 “not at all like me” to 4 “extremely like me,” to provide both quantitative and qualitative data to assist in capturing potential, and degree of, suicidal ideation and homicidal ideation. Consequently, a 2018 update removed the term homicidal ideation and this was replaced with “thoughts of hurting others” in order to reflect the actual content and questions asked on the instrument. The CCAPS measure is currently available for use within any college and counseling center that employs either the Titanium Schedule (Titanium Software, 2020) electronic records system or other electronic records systems.

### Reliability reporting and reliability generalization

A current challenge in published research centers on reliability analysis and reporting. All too often researchers report reliability incorrectly, if at all (Vacha-Haase and Thompson, 2011). Publications frequently present previous sources of reliability estimates as if these estimates are confirmations of reliability and omit the presentation of a reliability estimate for their own sample. This “induction” of reliability has led to reduced reporting practices and limited the potential volume of information about self-report measures as they are applied to individuals across studies. This also leads to a false inference that a measure is reliable, when in fact internal consistency is based on the individual taking a measure. Since a reliability coefficient is affected by the characteristics of the individuals completing assessment measures (Vacha-Haase, 1998), it is essential for researchers to report reliability coefficients for their study samples (Wilkinson, 1999). Reliability coefficients provide useful information about the calculated internal consistency when self-report measures are used with diverse samples. In psychometrics, a threat to reliability and generalizability in studies is both the homogeneity and heterogeneity of samples in characteristics such as education, age, or mental health status.

Reliability generalization (RG) was initially developed by Tammy Vacha-Haase (1998) and is a form of meta-analysis. RG is a technique that can be used to examine reliability estimates and identify the sources of variance

(Vacha-Haase et al., 2002). An initial step in the RG process is conducting a thorough and exhaustive search for all available publications (e.g., books, chapters, dissertations, and journal articles) which have employed a particular measure in their study. Next, the publication studies are assessed to determine whether or not they have reported reliability coefficients based on their sample. Zedeck (2014) defined a reliability coefficient as a value that represents the consistency of scores which occur across varied circumstances, such as different points in time. The reliability coefficient's value yields an estimate that typically ranges from 0 to 1, and this value is reflective of the obtained score variance and considered true variance, not error (Zedeck, 2014).

When statistically analyzing internal consistency for a study sample, varying forms of reliability coefficients exist. Cronbach's (1951) alpha is one of the most commonly reported reliability coefficients and was selected for use in this study. As with many meta-analyses, an initial presenting challenge in conducting RG research is acquiring enough studies reporting reliability coefficients based upon their study sample. Subsequently, as each study may vary in the scope and detail of information it provides the reader regarding the measurement and sample characteristics, coding information regarding the demographics of the sample can also present a challenge.

The overall goal of meta-analysis is to review the existing information across articles to determine any patterns present (Borenstein et al., 2009). Specifically, meta-analytic research empirically summarizes all available literature on a particular topic, or in this case, a measure, in order to synthesize and present information. RGs can be conducted with a varying number of studies. Depending on the purpose, some meta-analyses have been conducted with as few as two studies. Meta-analysis is considered secondary research, and therefore, is limited by the available primary research that has been conducted. Previous RG studies using scales such as the Beck Scale of Suicidal Ideation (BSSI) have been conducted with just 12 studies (King et al., 2014). Despite the fact that small sample sizes may occur in RGs, the purpose is to provide a current summary of what reliability information is available in literature from primary research. Thus, results reported reflect the current state of the literature and reporting practices.

## METHODOLOGY

The term Counseling Center Assessment of Psychological Symptoms and its acronym "CCAPS" were searched in multiple databases including Academic Search Premier, Education Research Complete, ERIC, Health Source, Medline, Primary Search, PsycARTICLES, PsychBOOKS, PsychINFO, and SocINDEX, for studies published from the scales' inception in 2010 to the present. Initial search results yielded 590 possible sources. Unfortunately, many of these references pertained to another measure with the same CCAPS acronym, and had to be excluded from this study. Overall, there were 55 sources found directly

related to the CCAPS. Among these, one was excluded in the present study as it was not a research study. All sources were able to be located and all were written in English. A total of 54 studies that reported the use of the CCAPS were included in this RG.

The 54 articles were assessed by an initial coder and then sorted into one of four assigned categories. The first category was reserved for those articles which used the CCAPS, but failed to mention the psychometric property of reliability in any form ( $n = 16$ , 29.6%). The second category contained studies that purported the instrument was reliable and/or presented the issue of reliability in some form but made no mention of a reliability estimate from either the authors' own data (that is, based on the individuals in their study), or from a previous source which employed the CCAPS ( $n = 5$ , 1%). In the third category were articles which used the CCAPS in their study, yet only presented reliability coefficients based on samples in previous studies ( $n = 19$ , 35%). The final category contained studies that used the CCAPS and reported a reliability coefficient based upon data collected in their current study ( $n = 12$ , 22%). For the purpose of this RG, only articles in this final category were included in the analysis of reliability coefficients for the CCAPS (Figure 1).

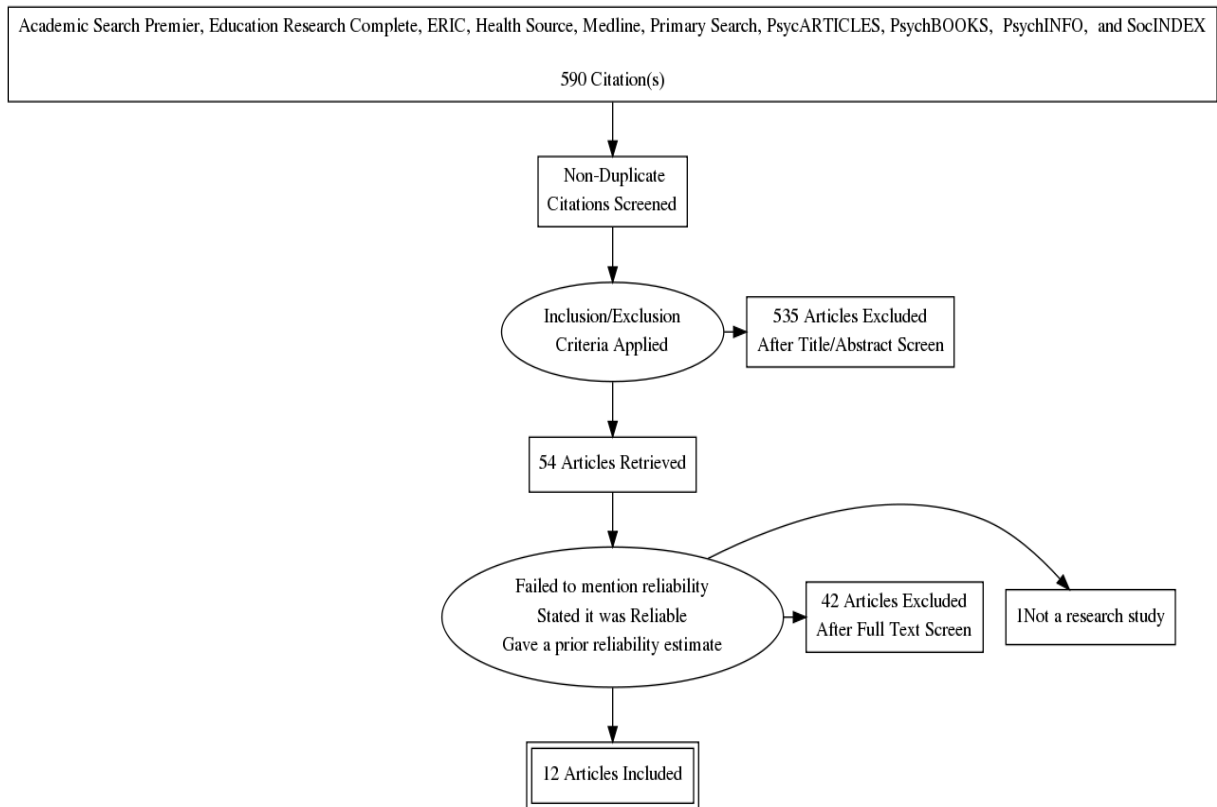
The current RG reviews Cronbach's (1951) alpha reliability coefficients, although different types of reliability coefficients may be used to estimate the reliability of a set of scores, such as split-half reliability estimate coefficients (Yin and Fan, 2000). Cronbach's (1951) alpha coefficients are a classic method for reliability investigations (Geisinger, 2013), a more commonly reported form of reliability (Hogan et al., 2000; Streiner, 2003), and are especially referred to in RG analyses. Consequently, one study reporting reliability in another form was omitted from the final analysis (Ghosh et al., 2018). When Cronbach's (1951) alpha data is reported in ranges it is not utilizable in the RG process. None of the studies provided alphas in ranges, which allowed for use of all alphas reported.

Interpreting Cronbach's (1951) alpha is typically based on ranges. Cronbach's (1951) alpha internal consistency reliability estimates can range from a value of zero (0) to 1.00, though there is some contention about whether or not it fully possesses an upper or lower limit (Streiner, 2003; Vaske et al., 2017). Reliability estimates can be interpreted using a variety of proposed value ranges. The recommendations proposed by Nunnally and Bernstein (1994) suggested coefficients greater than 0.70 are acceptable, and cautioned against values much greater than  $\alpha = 0.80$ , to be used as appropriate guidelines for interpreting typical research outcomes (Nunnally, 1978). Nunnally (1978) also expressed initial caution against alpha values much greater than 0.80, in terms of test-item construction, as he assumed some redundancy and, consequently, some artificial inflation in calculated reliability estimates. However, he recommended that in settings where key decisions are made based on the outcomes interpreted, alphas of 0.90 - 0.95 would be more appropriate (Nunnally, 1978).

Additional guidelines are provided by George and Mallery (2003) where "> 0.9 – Excellent, > 0.8 – Good, > 0.7 – Acceptable, > 0.6 – Questionable, > 0.5 – Poor, and < 0.5 – Unacceptable" (Nunnally, 1978, p. 231). While there is variation among researchers in the interpretation of ranges of alpha values, it is generally acknowledged that values over 0.80 are representative of an acceptable range (Webb et al., 2006). Cronbach's (1951) alpha estimates close to 1.00 have been criticized as indicating replication or redundancy within a scale. It is noted that alpha coefficients above 0.95 are not necessarily desirable as it would indicate item redundancy on a scale (Panayides, 2013; Streiner, 2003), as such values higher than  $\alpha = 0.95$  may be viewed with caution.

## Coding method

A uniform coding sheet was created to document and summarize



**Figure 1.** PRISMA flow diagram for systematic article review.

the relevant information and variables of interest for each of the 12 articles (see Appendix A). Each study used in this RG was coded by an initial coder to assess details of the study and subsequently blind-coded by a second coder. Each study was reviewed for coding accuracy and any discrepancies were discussed and resolved prior to final data entry. Some of the continuous variables coded included publication year, total reliability scores/coefficients, subscale total reliability score/coefficients, sample size, sex of study participants (coded as both the sample number as well as the percentage of males and females within the study), mean age, standard deviation of age, mean CCAPS scores, standard deviation of CCAPS scores, and means for CCAPS subscale total scores. In addition, certain sample and measurement characteristics were categorically coded as follows:

- (i) Race/Ethnicity: 1 = Predominantly Caucasian or 2 = Predominantly Non-Caucasian
- (ii) Education: 1 = In Undergraduate Studies, 2 = Completed Undergraduate Studies, 3 = In Graduate School, 4 = Completed Graduate School, 5 = Greater than 50% of the Sample Completed Some College, 6 = Other Education Levels (with space for qualitative entry), or 99 = Unknown
- (iii) Sample Type: 1 = Inpatient, 2 = Outpatient, 3 = Non-Clinical, or 4 = Other
- (iv) Sample Location: 1 = Within the US, or 2 = Countries Outside the US
- (v) Sampling Procedure: 1 = Random, 2 = Purposeful, 3 = Convenience, 4 = Other (with space for qualitative entry), or 99 = Unknown
- (vi) Sample Measurement: 1 = Pre/Post or 2 = Multi-Measure (over X sessions \_\_\_\_\_)
- (vii) Version of the CCAPS: 1 = The 62 - item version, 2 = The

34 - item version, 3 = Other item version/Number of Items, or 4 = Both the 34 - and 62 - item versions.

Coding sheets were completed and then scanned and saved electronically. Copies of all applicable articles were kept electronically. Data were initially entered into a Microsoft Excel datasheet and then imported into the Statistical Package for Social Sciences (SPSS) for statistical analyses.

### **Interrater reliability**

Interrater reliability was calculated among the three coders in this study. Each of the coders is a licensed psychologist with a history of training in meta-analysis methodology and was experienced in conducting RGs. Calculated percent agreement between coders was 88.87%. Interrater reliability was excellent indicating that coders were in alignment with one another on RG coding elements for this study.

## **RESULTS**

Studies reviewed within this RG were predominantly based on published peer-reviewed journal articles with the inclusion of one dissertation (see Appendix B). There were no book chapters included in the analysis. Reliability reporting practices for studies employing the CCAPS were low. Of the research reviewed, 38 studies

**Table 1.** CCAPS alpha coefficient values reported.

Reliability scale	N	Minimum	Maximum	Mean	Std. Deviation
Depression	7	0.850	0.920	0.894	0.023
Generalized Anxiety	6	0.800	0.850	0.821	0.022
Social Anxiety	5	0.796	0.850	0.818	0.022
Social Role Anxiety	1	0.690	0.690	0.690	-
Academic Distress	7	0.730	0.830	0.790	0.035
Eating Concerns	5	0.730	0.890	0.849	0.067
Family Distress	5	0.811	0.890	0.840	0.031
Hostility	5	0.750	0.863	0.829	0.046
Substance Use	5	0.830	0.870	0.851	0.014
Alcohol Use	1	0.869	0.869	0.869	-
Spirituality	1	0.940	0.940	0.940	-
Emotional Negativity	1	0.870	0.870	0.870	-
Anxiety	1	0.780	0.780	0.780	-
Positive Self	1	0.660	0.660	0.660	-
Total CCAPS	1	0.910	0.910	0.910	-
Distress Index	5	0.860	0.930	0.904	0.027

“-” indicates missing values or values that could not be calculated due to limits in values found.

mentioned reliability in some way, and among them, a total of 24 did not report their own reliability (63.16%). For those not reporting their own reliability, half (50%) cited a previous source ( $n = 19$ ), while 13% stated it was “reliable” ( $n = 5$ ). One study ( $n = 1$ ; 3%) cited a different type of reliability (RCI; Ghosh et al. (2018) wherein the researchers used the original 62-item version. The authors calculated Reliability Confidence Index (RCI) subscale values ranging from 0.71 (Substance Use) to 1.16 (Academic Distress; Ghosh et al., 2018). Overall, a total of 12 studies provided 13 Cronbach’s (1951) alphas calculated based upon the study sample of individuals representing a total of 27,237 participants were analyzed in this RG.

Those studies using both the original CCAPS 62 – item scale, or the 34 - item scale, reported Cronbach’s (1951) alphas which ranged from good to excellent (Minimum  $\alpha = 0.730$ ; Academic Distress and Eating Concerns, Maximum  $\alpha = 0.920$ ; Depression). Only one study provided information regarding Cronbach’s (1951) alpha for the Total CCAPS which was in the excellent range ( $\alpha = 0.930$ ); interestingly, this study was a validation study of a Thai version of the CCAPS 62 – item instrument (Ratanasiripong et al., 2015). One study reported their own subscales devised as a part of their investigation; reported alphas for this study ranged from 0.660 - 0.940. Table 1 provides a summary of reliability estimates reported for all versions of the CCAPS found within this study.

Examining internal consistency estimates calculated for studies reporting Cronbach’s (1951) alpha values were robust for the subscales of the 62 – item scale, with mean alpha values no less than 0.788 ( $M \alpha R = 0.788 - 0.896$ ).

One study which used the 34 – item version reported alphas for the Distress Index for the 62 – item version and the 34 – item version, when combined, were in the good to excellent range ( $M \alpha = 0.876$ ,  $M \alpha = 0.915$ , respectively). Table 2 gives a summary of mean alphas and standard deviations of alphas reported for the 62 – item version compared with the initial 62 – item validation study (Locke et al., 2011). Unfortunately, due to low reliability reporting in studies using the 34 – item version, data for this version were not available to present in Table 2. Additionally, there were no reported Cronbach’s (1951) values available for the total CCAPS scale to assess and report.

The CCAPS 34 – item version was not well represented in this RG study as there was only one study which employed this version whose authors calculated and reported alphas for their sample (Locke et al., 2012). The sole study by Locke et al. (2012) reported alphas from  $\alpha = 0.760$  (Academic Distress) - 0.896 (Depression). No meaningful data analysis could be conducted based on the 34 – item version due to the lack of reliability reporting in published studies. The CCAPS Distress Index is often utilized as a general measure of college distress endorsed by the individual. In this analysis, the Distress Index reported reliability estimates that were in the good to excellent range ( $n = 5$ ;  $R \alpha = 0.860 - 0.930$ ,  $M \alpha = 0.904$ ). A study that generated their own subscales produced slightly lower reliability estimates based on the individuals who completed the measure ( $n = 1$ ;  $R \alpha = 0.660 - 0.940$ ;  $M \alpha = 0.8625$ ).

Despite low reliability reporting, statistically significant outcomes were observed for some of the variables examined in this study though these results should be

**Table 2.** CCAPS - 62 means and standard deviations of alphas reported.

Reliability scale	Alphas
	<i>M (SD)</i>
Depression	0.896 (0.032)
Generalized Anxiety	0.827 (0.025)
Social Anxiety	0.823 (0.021)
Academic Distress	0.788 (0.043)
Eating Concerns	0.843 (0.076)
Family Distress	0.845 (0.033)
Hostility	0.823 (0.051)
Substance Use	0.856 (0.010)
TOTAL CCAPS	--
Distress Index	0.897 (0.032)

"--" indicates missing values or values that could not be calculated due to limits in values found.

interpreted with caution. For the depression subscale, there were three significant findings of note. First, although there was a small sample size there is some indication that Publication Year was significantly, negatively, correlated with Depression subscale reliability estimates ( $r(5) = -0.77, p = 0.043$ ). This finding suggests that reliability estimates are decreasing over time for the subscale. Second, the Depression subscale and Location Type, whether a study was conducted within the US or outside the US, was statistically significant ( $n = 5; t(3) = 3.811, p = 0.032$ ). While both alphas reported in the US ( $M\alpha = .92$ ) and Outside the US ( $M\alpha = .86$ ) were within the excellent range, US – based sample reliability estimates were significantly higher. Third, the percent of females within a reported study was significantly, negatively, correlated with the Depression subscale reported reliability estimates ( $r(6) = -0.716, p = 0.046$ ).

As shown in this RG study, very few studies employing the CCAPS reported calculated Cronbach's alphas (1951) or any reliability estimate for their study sample. As such, to estimate the number of studies which may impact the current findings, a Fail-Safe  $N$  proposed by Howell and Shields (2008) was calculated. The calculated Fail-Safe  $N$  for the CCAPS 62 – item version reflected a possible 15 "file drawer" studies that could lower the reliability estimates below the threshold of 0.80. Unfortunately, the following variables were unable to be used as there were not enough studies that reported details for these characteristics: Alcohol Use subscale, CCAPS Total, subscale means, and standard deviations, reliability total, Family Distress Index, Distress Index total, Eating Concerns subscale, DSM Diagnosis, presenting problem, medical diagnosis, marital status, religion, income, medications, academic probation, suicidal ideation, homicidal ideation and language.

## DISCUSSION

Even though the CCAPS is widely used among many

college and university counseling centers, an RG meta-analysis examining the overall reliability of the instrument has not been conducted. A problem exists in current published literature; authors are not calculating and reporting reliability estimates, such as Cronbach's (1951) alphas for their study sample. Reliability is essential to calculate and ensure it is robust ( $\geq 0.80$ ) in order to begin to infer validity. Unfortunately, many studies are using measures, inferring validity of their results and not reporting reliability coefficients; thus, eliminating a crucial element in statistics and scientific inference. RG studies help illuminate and assess reliability reporting (Vacha-Haase, 1998). The current RG found that reliability estimates on the subscales for the CCAPS – 62 had similar reliability to those that were reported by Locke et al. (2011). Unfortunately, due to low reliability reporting practices in published literature for the CCAPS – 34 (Locke et al., 2012), analysis could not be conducted for this version.

Overall, reporting patterns among published research studies using the CCAPS measures demonstrated there was an overall underreporting of reliability coefficients. Many studies did not report reliability coefficients based on their own samples, rather, they reported alpha coefficients from previous sources, stated that the CCAPS is "reliable," reported a different type of reliability coefficient, or did not discuss reliability at all. More specifically, in the current study, only 34% of the articles that were reviewed reported an alpha coefficient directly calculated from their sample. These results are consistent with previous reliability generalization studies (Vacha-Haase and Thompson, 2011) that indicate very small percentages of studies overall reviewed reported reliability data for their samples.

Analysis of the available reliability coefficients revealed the average reliability on the CCAPS – 62 to be comparable to the original study by Locke et al. (2011), who found a range of alpha values from 0.781 (Academic Distress) to 0.913 (Depression). Based on the limited



Cronbach's (1951) alphas reported and found in this study, the reliability estimates within US samples and for samples internationally fell within good to excellent ranges. Thus, with limited information to date, the CCAPS seems to be able to be used with diverse samples worldwide, though further research is necessary to more concretely affirm this observed trend. Due to the aforementioned underreporting patterns, more in-depth analysis of cross-cultural reliability and generalizability are needed to understand the CCAPS instruments' psychometric properties when used with diverse undergraduate and graduate student populations.

The Depression subscale revealed some trends suggesting significant outcomes in relation to other variables. This study found a significant, negative correlation between the Depression subscale and publication year, inferring that reliability estimates related to depression decrease over time. This suggests wording present on this subscale may not translate well over time. A significant, negative correlation was found between percentage of females and the Depression subscale. This infers that there may be some aspects of the depression subscale that are less likely to be endorsed or experienced by females completing the CCAPS. This finding may provide further insight to research postulating that men and women endorse different symptoms of depression (Martin et al., 2013). For example, Martin and colleagues' (2013) findings inferred that men with depression were more likely to endorse engaging in aggression, substance abuse, and risk-taking behaviors. And finally, there was a statistically significant difference between Depression subscale estimates reported within the US and those internationally, with studies in the US reporting higher alphas values. It is important to note both alpha values calculated for individuals within the US and internationally were within the excellent range, thus individuals globally appear to respond reliably to the Depression subscale. The CCAPS Distress Index alpha coefficients reported for this study were within the excellent range which indicates that the Distress Index can be useful to indicate to a clinician whether or not a client is experiencing significant psychological distress.

### Limitations

The lack of available reliability estimates in the majority of published studies using the CCAPS measures was a limitation for this reliability generalization meta-analysis. Due to the limited studies that were available for analysis, it is possible that different results may have been found if all studies had indeed reported Cronbach's (1951) alphas for their samples. This meta-analytic technique requires reliability estimates based upon each study's own data, and it is unfortunate that a great proportion of publications do not report Cronbach's (1951) alpha coefficients, or even mention reliability at all. A second limitation was that some variables were difficult to track

due to a lack of reporting and drastic variability within the published research which included income, religion, medical illness, DSM diagnosis, education, marital status, academic probation, and alcohol use. Given the nature of meta-analytic research as secondary research this limits the current data able to be reported. For example, no studies reported religion in the same way, confounding the ability to quantify it.

Subscale analyses revealed there may be sex bias on the CCAPS related to the Depression subscale, however, given the limited data in this study, additional research may need to examine this point further. There are also possible generational concerns, as it was found that publication year had a significant and negative relationship with measuring depression; suggesting that the measure is not able to reliably capture depression in the same manner over time. This warrants further investigation as the current study had limited reliability estimates reported. With the increases in rates of anxiety and depression in the younger generations such as those reported in the Stress in America: Generation Z (2018) report, it is important to select appropriate measures that capture the essence of these constructs reliably and in a language that is easily relatable.

In summary, reliability reporting practices such as those purported in the APA Task Force on Statistical Inference (Wilkinson, 1999), those suggested by the American Educational Research Association, in conjunction with American Psychological Association and National Council on Measurement in Education (2014), and the Journal Article Reporting Standards for Quantitative Research (Appelbaum et al., 2018), are not being upheld to these *expected* standards. This study provides additional evidence that reliability reporting practices continue to be lacking in published research.

### Recommendations for upholding reporting standards

It is imperative for those in teaching, training, and journal review positions to appropriately model reliability reporting practices. As leaders and mentors in the field of counseling and psychology, these professionals can help shape the new generations of researchers while also effecting changes in reliability reporting practices. Faculty and dissertation committee members can be key influences to ensuring masters and doctoral level counseling and psychology students uphold standards of reliability reporting practices. Instructors of statistics courses need to ensure that the relevance and importance of reliability analyses within studies is covered as part of the core content. Journal reviewers are in an excellent role to provide feedback about reliability analyses and request revisions implementing these reliability reporting practices if missing in initial drafts of submitted manuscripts. As demonstrated by this study, reliability reporting is necessary though often overlooked.

Upholding best practices for journal and publication

reliability reporting standards includes a few steps. First, authors can cite prior reliability coefficients for scales they are using in their study, as well as initial normative data, and any subsequent reliability coefficients which are related to their current study sample demographics. Second, it is incumbent upon authors to calculate and report the reliability coefficient for the individuals in their study sample. Third, it is helpful to include as many sample (that is, age, ethnicity, sex, gender, sexual orientation, romantic orientation, marital status, mental health diagnosis) and measurement characteristics (total scores, subscale scores, means, standard deviations, language) as possible so that future studies employing meta-analytic techniques may be more meaningful. Fourth, authors need to be explicit about the version of the measure used within the study. If there are any variations in version used, these should be noted clearly followed by calculating and reporting the associated reliability coefficients. Following these four simple steps will align with the standards of practice for reliability reporting and augment the field of psychometrics in counseling and psychological research.

### Future directions

Future CCAPS research efforts could focus on inclusion of DSM diagnosis, alcohol use, academic probation, as well as diversity variables and report reliability coefficients based on study participants. Additionally, there were few studies that reported use of the CCAPS with lesbian, gay, bisexual, and gender variant individuals. Future researchers are encouraged to be mindful of diversity and permit study participants to self-identify sex, gender, and sexual orientation in order to better capture an accurate picture of their sample. This is significantly important as many LGBT+ individuals are navigating their sexual and gender identity prior to and during their college years (Bilodeau and Renn, 2005; Edwards-Leeper et al., 2016; Wolff et al., 2016). It is also well documented that navigating the stages of one's sexual and gender identity development has a significant impact on mental health and functioning (Cass, 1996; Cramer et al., 2018; D'Augelli, 1994; Edwards-Leeper et al., 2016; Fassinger, 1998; Wolff et al., 2016). For example, LGBT+ individuals are at higher risk for mental disorders and suicide attempts when compared to heterosexual individuals (Hass and Drescher, 2014; Wolff et al., 2016). With this information, further CCAPS research could explore reliability coefficients for individuals with different sexual orientations and gender identities.

### Conclusion

In summary, our findings illustrate that published reliability scores are good to excellent which are similar to

those published by Locke et al. (2011) for the CCAPS – 62. Current findings indicate the CCAPS demonstrates excellent reliability coefficients for college and university students worldwide, with the exception of the Depression subscale which shows some initial indication suggesting reliability is decreasing over time and needs further research. It is important for researchers who use the CCAPS, or any other self-report measure, to report the reliability estimates for their specific sample in order to uphold standards of reporting practices in counseling and psychological research.

### CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

#The third author delineates that this article and included views and research findings are the author's own and are in no way affiliated with Minnesota Department of Human Services, Direct Care and Treatment – Forensic Services.

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**APPENDIX A**

**Reliability Generalization Coding Sheet**

**THE CCAPS**

**ARTICLE ID NUMBER:** \_\_\_\_\_

**CITATION:** \_\_\_\_\_

**PUBLICATION TYPE:** 1 = Journal Article 2 = Book Chapter 3 = Book 4 = Dissertation 5 = Other

**PUBLICATION YEAR:** \_\_\_\_\_

**RELIABILITY:** Based On: 1 = Their Data 2 = Previous Source 3 = State "It is Reliable" 4 = Didn't Report 5 = Pilot

DEPRESSION \_\_\_\_\_ FAMILY DISTRESS \_\_\_\_\_  
 GENERALIZED ANXIETY \_\_\_\_\_ HOSTILITY \_\_\_\_\_  
 SOCIAL ANXIETY \_\_\_\_\_ SUBSTANCE USE \_\_\_\_\_  
 ACADEMIC DISTRESS \_\_\_\_\_ ALCOHOL USE \_\_\_\_\_  
 EATING CONCERNS \_\_\_\_\_

Page # _____
-----------------

**TOTAL CCAPS RELIABILITY SCORE:** \_\_\_\_\_

**SAMPLE CHARACTERISTICS:**

**Sample Description:** \_\_\_\_\_

**Sample Size:** \_\_\_\_\_

**Sex:** \_\_\_\_\_% of Males (N=\_\_\_\_), \_\_\_\_\_% of Females (N=\_\_\_\_), Transgender (N=\_\_\_\_ or %\_\_\_\_)  
 \_\_\_\_\_% Prefer Not to Say (N=\_\_\_\_), \_\_\_\_\_% Unknown (N=\_\_\_\_)

**Race/Ethnicity:**

1 = 100% White	2 = > 60% White	3 = > 60% Hispanic	4 = > 60% Asian
5 = > 60% Black	6 = no predominant	7 =other_____	99 = Unknown

**Mean Age (and Range):** \_\_\_\_\_ **Standard Deviation of Age:** \_\_\_\_\_

Distress Index \_\_\_\_\_ SI \_\_\_\_\_ HI \_\_\_\_\_

DSM Diagnosis: \_\_\_\_\_

Presenting Problem: \_\_\_\_\_

Medical Diagnosis: \_\_\_\_\_

Medications: \_\_\_\_\_

Marital Status: \_\_\_\_\_

Religious Views: \_\_\_\_\_

Income: \_\_\_\_\_

**Academic Probation:** \_\_\_\_\_ **Yes** \_\_\_\_\_ **No** **Other:** \_\_\_\_\_

**Education:** 1 = In Undergrad 2 = Completed Undergrad 3 = In Grad School  
 4 = Completed Grad School 5= > 50% completed some college  
 6 = Other \_\_\_\_\_ 99 = unknown

**Sample:** 1= Inpatient 2 = Outpatient 3 = Non-Clinical 4= other: \_\_\_\_\_

**Location:** 1 = In the U.S. 2 = Not in the U.S. (specify: \_\_\_\_\_)

**SAMPLING PROCEDURE:** 1 = Random 2 = Purposeful 3 = Convenience 4= Other \_\_\_\_\_

99 = Unknown

**Sample Measurement:** 1= pre/post 2= multi-measure (over X number sessions \_\_\_\_\_)  
3= other \_\_\_\_\_

**MEASUREMENT CHARACTERISTICS:**

**Language:** 1 = English 2 = Not English (Specify: \_\_\_\_\_)

Distress Index: \_\_\_\_\_ SI: \_\_\_\_\_ HI: \_\_\_\_\_

**Overall CCAPS Mean Total:** \_\_\_\_\_ **SD total:** \_\_\_\_\_

DEPRESSION	Mean Total _____	SD: _____	FAMILY DISTRESS	Mean Total _____	SD: _____
GENERALIZED ANXIETY	Mean Total _____	SD: _____	HOSTILITY	Mean Total _____	SD: _____
SOCIAL ANXIETY	Mean Total _____	SD: _____	SUBSTANCE USE	Mean Total _____	SD: _____
ACADEMIC DISTRESS	Mean Total _____	SD: _____	ALCOHOL USE	Mean Total _____	SD: _____
EATING CONCERNS	Mean Total _____	SD: _____			

**Version:** 1 = Original scale 62 item 2 = CCAPS 34 3 = Number of items: \_\_\_\_\_ 4 = Both 62 and 34 item versions

-----END OF CODING SHEET-----

**APPENDIX B**

**References included in the meta-analysis**

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*Full Length Research Paper*

# Learning and/or “Cure”? The notion of learning context in the health ambit

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**Mental health is not the object of study of only one discipline, but of different fields of knowledge including anthropology. If it is considered that (1) mental illness is related to learning and (2) learning happens in a relational context between the subject and his/her environment, it is possible to assume that a change in the context could mean changes in the subject's health. Therefore, an approximation to the concept of “cure” may include the idea of building and reforming a habit of thought. By modifying a habit of thought, the individual can change their situation and improve their relationships with the environment, which tends to re-equilibration and health. In this work, this hypothesis is developed and empirical evidence was shown with five Wernicke Korsakoff's Syndrome inpatients learning to solve the Tower of Hanoi that supports the assumptions. Conversely to what is expected to amnesic people, empirical results showed that the participants not only learned the task (*proto-learning*) but also improved their execution with practise and training (*deutero-learning*) and reached some level of flexibility. It is suggested that this behavioural change depends, at least in part, on the context created in the examiner-participant relationship. People are not ill *per se* but they are ill only in relation to an environment which surrounds and conditions them.**

**Key words:** Learning, environment, health, cure.

## INTRODUCTION

Despite being associated with the mind-body separation, which is groundless, mental health is not the object of study of only one discipline, but of different fields of knowledge such as cognitive anthropology, medicine, psychology, pedagogy and others. In the case of cognitive anthropology, its aim is to elucidate the underlying principles of behaviour, assuming that each person (and culture) has their own system of perception

and organization of the world-environment.

Mental health is one of the main aspects of human behaviour and is characterized by a series of standards or learning thresholds. In this paper behaviour is understood as “(...) all action directed by the organisms toward the outside world in order to change conditions therein or to change their own situation in relation to these surroundings” (Piaget, 1978: IX).

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The notion of *vection* (Piaget, 1977) refers to the gradually increasing opening to new possibilities of interaction with the environment, an increase in open behavioural adaptations which tend to expand the cognoscibility and liveability of the environment. While the occurrence of internal movements such as blood circulation or the changes produced by the function of respiration on the atmosphere are not understandable as behaviours, it is assumed that behaviour tends to modify the relationships between the organism and its environment (Piaget, 1978).

Lahitte and Hurrell (1990) explained the difference between activity and behaviour since, if speaking about behaviour, the term needs to be referred to a context of significance: the intentional factor of behaviour makes it capable of being explained in communicational terms. According to the context of observation, acts will be qualified as behavioural or non-behavioural because the concept of behaviour depends on the context in which the observation (of the behaviour) was made.

Behavioural relationships are not internal to the individual: although changes occur in the terms of the relationship which correspond to its dependence-protection, the relationship as such is precedent. That means that the understanding of behaviour through the concept of relationship yields to a novel logical kind of learning which was named by Bateson (1993) learning II or *deutero-learning*.

In this context, it is possible to address different kinds of learning, which is understood as changes in behaviour acquired through experience (frequently by repeated experience) which propitiate the adaptation of the organism by means of re-equilibration and self-regulation. In this paper mental health is seen as closely related to the individual's learning:

“Lo que en algún momento entendíamos como enfermedad o patología o desviación social son, en realidad, nuevas propiedades que adquieren los seres humanos cuando alteran su condición de equilibrio. Estas formas que podríamos entender como nuevas propiedades se estabilizan como patologías en las que el sistema, el sujeto en su conjunto es sometido a fuertes condicionamientos del medio (relacional, familiar, escolar...)” (Lahitte and Ortiz Oria, 2005: 89)<sup>1</sup>

As far as the authors of this paper know, the perspective of learning in mental health from an anthropological-educational point of view is not an usual issue in the health bibliography; therefore, this work tends to contribute with a perspective which intends to reunite points of view that otherwise are separated one from

<sup>1</sup> What we before thought of as illness or pathology or social deviation are, indeed, new properties that human beings acquire when they change their equilibrium condition. These forms which we could understand as new properties are stabilized as pathologies in which the system, the complete individual is subjected to hard environmental constraints (such as relational, familiar, school constraints).

another.

If it is considered that (1) mental illness is related to learning and (2) learning happens in a relational context between the subject and their environment, it can be assumed that a change in the context could mean changes in the subject's health. Therefore, an approximation to the concept of “cure”<sup>2</sup> may include the idea of building and reforming a habit and an ambit of thought (a pattern of learned behaviour that could be transferred to another space which in turn can be influenced or not by the context involved); this can affect the person's quality of life. In this paper it is assumed, as a hypothesis, that by modifying a habit of thought, the individual can change their situation and this can mean an improvement in their relationships with the environment, which tends to re-equilibration and, in turn, benefits the subject's health. In this work it is developed this hypothesis and showed empiric evidence that supports this assumption.

## MATERIALS AND METHODS

A mixed methodological approach was applied to develop the paper: the main method was the argumentation and the second one, which takes the form of a quasi-experimental design, was nested into the first one as a strategy to present and support the main hypothesis. First, it was developed a theoretical hypothesis based on bibliographical analysis and synthesis, using the argumentation as the main method.

Secondly, the hypothesis was illustrated with an empirical case that follows a quasi-experimental design with a convenience sample of five male, middle-aged inpatients with Wernicke-Korsakoff's Syndrome who showed anterograde amnesia (sometimes retrograde too) and executive problems. The instrument was a commercial version of the Tower of Hanoi and it was developed a sequential procedure to probe the participants' learning.

The learning procedure follows the dynamic assessment principles (cfr. Bacigalupe et al., 2011) in a quasi-experimental setting with pre and post-tests, considering the individual as his own control. The pre-test consisted of a single application of the Tower of Hanoi with 5 rings with no other assistance that the explanation of the rules to follow (to move one ring per time and never put one bigger ring upon a smaller one) and the final objective (to form the pile in the opposite axis from departure, with the biggest ring on the base and the smallest ring on the top). The post-test consisted of a single application of the Tower of Hanoi with minor assistance from the examiner (a second trial during the same session was allowed if necessary); this time the number of rings varied according to the best performance achieved by the participant during the training period, from 2 to 5 rings. The training period consisted of ten sessions of teaching-learning in which the examiner (MAB) assisted the participants, helped them to remember the rules and final objective, and served them as an “external frontal lobe” to control their automatic behaviour. More detailed explanation of procedures can be found in the open-access journal paper by Bacigalupe et al. (2013). Ethical norms were

<sup>2</sup> It is relevant to make it clear that this paper presents an anthropological-educational perspective as a contribution to an integral and interdisciplinary view of mental illness but that the authors are not able to write as if they had the specific knowledge of medicine; therefore in this paper the word “cure” is written between quotation marks.

followed on conducting the research (Universal Declaration on Bioethics and Human Rights, 33rd UNESCO's General Conference, 2005; Helsinki Declaration, 18th World Medical Assembly, Finland, 1964 and its amendments).

## RESULTS AND DISCUSSION

### Learning contexts, cognition and problem solving

In this work it is assumed that there exists five learning contexts which are classified into two sub-groups: positive learning (learning to do), and negative learning (learning to inhibit actions). Two kinds of stimuli are present in both of them: conditioned and unconditioned stimuli. The five learning contexts are: (a) problem solving, (b) pavlovian context, (c) instrumental reward, (d) instrumental avoiding, and (e) serial or mnemonic context.

Learning contexts gradually build habits of thought which, once formed, function as behavioural premises in the subject. Authors of this paper assume that habits of thought depend on the contexts and stimuli, and changing any of them, habits can acquire new forms and, eventually, become flexible.

*Proto-learning* and *deutero-learning* are two kinds of learning gradients. *Proto-learning* or first-order learning (Bateson, 1972/1998) refers to classic and instrumental conditioning, and mnemonic learning. *Zero-learning* (the reception of signals or external information) is a kind of learning which precedes *proto-learning*. Finally, *deutero-learning* or second-order learning is a kind of learning which arises as a *proto-learning* gradient when it is applied some repetition or practice on the same topic, as a result of which the execution time or the quantity of mistakes improve progressively. In this way, people can develop patterns of behaviour which can be transferred to other contexts. In this case, *deutero-learning* can be a kind of *learning to learn*. At this point it is relevant to state what is the meaning of *cognition* from the point of view of the authors of this paper. Héctor (Lahitte and Hurrell, 1995; Lahitte and Ortiz Oriá, 2005) points out that the aim of the anthropologists who work on cognitive anthropology is the recognition of the observation points from which the *ens universale* is configured and expressed in each society, which results in a cognitive style (Maruyama, 1980; 1992), a general vision shared by every member of that society. The term *cognition* names such questions: in a figurative sense *cognition* means what is configured, what is built.

The term *cognition* involves some kind of internal representation of the external world and the organization of sensory information in internal models. Depending on the circumstances in which it is expected to find it, *cognition* can be understood as adaptation, and it neither makes sense in contexts of maximum variability (having an internal map does not make sense if the territory is constantly changing) nor in zero variability contexts (cfr.

Lahitte et al., 2006). The function of cognitive brain mechanisms permits predictive processing, understood as any type of processing which generates not only information about the past or the present, but also future states of the body or the environment; in this sense, predictive processing helps to generate goal-directed and adapted behaviour (Bubic et al., 2010).

What is characteristic of human cognition according to Tomasello (2000) is the possibility that human beings have to aggregate cognitive resources in a truly original manner. The author distinguishes human cultural learning from other kinds of social learning and includes within the first learning by imitation, learning by instruction and collaborative learning. These three kinds of cultural learning are possible thanks to a particular form of social cognition, which is the ability of human beings to understand their conspecifics as themselves, with an intentionality and mental life like their own. This understanding makes people able to put themselves in the place of others "so that they can learn not just *from* the other but *through* the other" (Tomasello, 2000: 6)<sup>3</sup>.

Specifically, human cognition, according to Tomasello (2000), is the result of a kind of species-specific cultural transmission. Traditions and artefacts incorporate modifications in the course of time with a *ratchet effect* by which some processes cannot go back once they have happened. The process of cultural accumulation requires not only the creative invention but also, and fundamentally, faithful social transmission which works as a ratchet to avoid regressions and losses. In this way, a new practice or artefact faithfully preserves its characteristics until a further modification or improvement occurs which will be learned by others, preserved and eventually modified and the whole process will be repeated. The dynamics of the instruction-learning linkage allows to conceive *cognition* not merely centered in the individual but as the result of a relationship.

These assumptions about *cognition* imply that learning processes are not necessarily *placed* in the brain, but that *cognition* is an extended process (Broncano, 2007; Clark, 1999; 2004; Clark and Chalmers, 1998; Sprevak, 2020). The authors of this paper think that learning happens in the individual-context interaction and the environment where this relationship takes place can be called learning context. Among the above mentioned learning contexts, the problem solving environment brings into play the concept of transference. Transference is defined as the ability to expand what has been learnt in a given context to new contexts (Bransford et al., 2002; UNESCO, 2013), thus gaining access to an ample group of purposes and intentions.

In this paper, it is made a distinction between (a) simple, automatic procedures in exercises, and (b) strategic procedures of problem solving, which constitute one variety of *deutero-learning*. The first step in procedural learning is occupied by the techniques and

<sup>3</sup> Italics are from the original text



sequences of actions developed routinely (Poza, 2000). These are not single habits learned implicitly by reinforcement or by exposure to a model, but are composed by sequences of actions learned by repetition and by explicit, associative training until they become automatic procedures. Techniques are useful to cope with exercises. However, when there is variation in any part of the situation of an exercise, it becomes a problem because the sequential repetition of the steps learned is not enough to get a solution and the subject requires to develop a strategy. This is the second step in procedural learning and consists in the utilization of techniques in new or complex situations in which techniques must be adapted to specific demands. The acquisition of strategies requires constructive learning more than associative learning. In this process, people develop reflection on their own practice, and re-elaborate their actions according to self-assessment. One particular type of strategy is learning to learn and self-monitor of one's own learning, which implies learning to use reflection about one's own knowledge, also known as *metacognition*. The higher level of procedural learning is *learning to learn*, and problem solving, which is supported by working memory processes (Gray et al., 2003; Lezak, 1995; Thompson, 1993).

The concept of cognitive flexibility is the key factor for the distinction between solving a simple exercise or problem, and solving a problem, and can be illustrated by novices and experts' performances. The difference between merely skilled and highly competent people can be observed in a variety of fields of knowledge and implies a kind of flexible expertise. The concept of *adaptive expertise* (cfr. Bransford et al., 2002) provides an important learning model. Adaptive experts are able to approach new situation flexibly and can learn along their whole lives. They not only use what they have learnt but also develop their *metacognition* and permanently question their expertise level in order to surpass themselves.

The concept of *metacognition*, which characterises adaptive expertise, was originally introduced in the context of children studies and refers to the ability to self-monitor their present comprehension level and to decide when it is not adequate (Bransford et al., 2002). Daily problem solving involves cognitive processes related to the access and manipulation of previous knowledge which is relevant to a present problem, the generation of appropriate strategies, the inhibition of inappropriate or routine responses which are not applicable and the ability to judge the efficiency of the solution. Furthermore, daily problem solving involves emotional and social abilities. These daily problems share some properties with neuropsychological or structured problem solving tasks applied in laboratories, in which the sequence can be characterized by recognition, difference-distinction, and type. However, daily problems differ from laboratory ones in that they present a less defined structure, they may

have an open and relative end, there exist competing properties depending on the context, and it is necessary to include the point of view of others and to have an adequate social-contextual knowledge. Furthermore, the potential consequences of solution alternatives should be examined and pondered (Channon, 2004).

Cerebral frontal dysfunction can be associated with difficulties in different aspects of problem solving including working memory; for example, a decrement in the efficiency of using previous knowledge can be observed as a result of a memory deficit in the generation of search strategies (Channon, 2004). Behavioural disturbances associated with frontal lobe lesion can be summarised as follows (Baddeley, 1999; Lezak, 1995): 1. Initiation problems: a decrement in the rate of behaviour emission and a decrement or complete loss of initiative, a loss of spontaneity and productivity, and, sometimes, apathy, muteness or the absence of response (with respect to some reference from the observer); 2. Perseveration and difficulties in making mental or behavioural shifts; 3. Trouble finishing: loss of control, impulsivity, over-reactivity, disinhibition and difficulties to avoid wrong, unwanted answers, particularly if they are part of a current chain response; 4. Deficit in self-consciousness: deficit in self-criticism, inability to see execution mistakes, to appreciate the impact of the self on others and adequately evaluate a social situation; the sense of the self seems to be very vulnerable in people with frontal lesions; and 5. Concreteness: incapacity to dissociate themselves from the immediate context, in which objects, experiences and behaviours are understood from their most obvious aspect, resulting in an incapacity to plan and sustain a behaviour driven by objectives. Although many of these patients show an inability to manipulate abstract concepts and can only generate concrete concepts spontaneously, others preserve a high degree of conceptual abilities in spite of their loss of perspective and literal consideration (Lezak, 1995).

### **Problem solving in a mnemonic learning context with people with amnesic and executive deficits: A possibility**

Tower tasks involve problem solving functions and transference in which the examinee must rearrange some discs or little balls by a minimal number of movements in order to make them match the model or reach the established final objective.

Developed on the basis of Simon's model of the Tower of Hanoi, tower tasks help to assess executive functions and problem solving. It is agreed that they primarily involve planning (Anderson and Douglass, 2001; Lezak, 1995; Newman et al., 2003; Riccio et al., 2004; Spreen and Strauss, 1998): if people plan movements and visualise solutions in advance it is supposed that they

would be involved in the development of a more efficient problem solving strategy.

Tower tasks have rules to follow to reach the final solution: they vary in the successive versions and have different structures and ways of assessing execution (Riccio et al., 2004). The process of solution of tower tasks synthesises two models about executive functions (Newman et al., 2003)<sup>4</sup>: Shallice's information-processing model, published in 1982 (Shallice, 1982; Baddeley, 1999; Newman et al., 2003), and Newell's model which was published in 1990 (Newman et al., 2003).

According to the first model, there are two cognitive control paths in executive functions: (a) routine-like, bottom-up and perceptually driven and (b) strategic, top-down and driven by objectives.

On the other hand, Newell's theory poses that problem solving involves a sequence of cycles of four stages each: (a) deliberation, in which all the alternative operators are considered in parallel, (b) parallel computation of preferences between pairs of operators, which Lahitte (1981) calls learning in increasing complexity, where each preference refers to the fact that one operator is preferable to another, (c) decision making by organising preferences to select the best operator, and (d) application of the selected operator to the current state so as to produce a new state. However, if any one of the preconditions to apply the operator is not satisfied, it will be necessary to put forward sub-objectives to reach the preconditions before applying the selected operator in this fourth phase.

The two models, Shallice's and Newell's theories, work together because while the ordinary approach to solve the tower is guided perceptually by proposing operators which enhance visual similitude, trying to reduce the range between the initial state and the goal state (without taking into account whether preconditions are achieved), the strategic, non routine approach takes control when these conditions are not met, thus creating sub-objectives to satisfy preconditions (although they can enlarge the perceptual distance between the initial and the final state of the tower). Once the preconditions are satisfied, the perceptual mode regains control to apply the original perceptual operator.

It has been shown that thinking aloud can help solve the tower. Instead of representing a mere verbalisation, thinking aloud might be some form of metacognition resulting in an incremented effort to produce a self-explanation of the process to reach the solution (Noyes and Garland, 2003). This could be illustrated in the following example with the Tower of Hanoi (see below for details of our research). The patient can use the technique of thinking aloud without metacognition (mere verbalisation) if they say "this ring here, the other there" and "the little ring on the bigger one" but their action is

dissociated from what he/she is saying and this is mere verbalisation, which does not guide his/her actions but is independent and not coordinated with the procedure. Instead, if the patient's words help him/her to understand that he/she is making a wrong movement and thanks to this comprehension he/she can change the strategy on the spot, he/she is using thinking aloud as a metacognitive technique.

Considering the depicted conditions in tower tasks, it would be supposed that patients with anterograde amnesia (sometimes retrograde too) and executive problems such as people with Korsakoff's syndrome should not be able to learn to solve the task in a mnemonic learning context (*proto-learning*) and even less by the highest level of *deutero-learning*. The participants were Wernicke-Korsakoff's syndrome patients learning to solve the Tower of Hanoi (Anderson, 1995; Anderson and Douglass, 2001; Lezak, 1995; Spreen and Strauss, 1998).

One of the most important characteristic of problem solving tasks is the search of a sequence of steps that allows solvers to pass from the current state to the target one (Anderson, 1995), in which planning is the main process. The Tower of Hanoi is useful to measure the individual's planning during a problem solving process in which they face a platform with three axes (A, B, and C) and a number of rings which differ in their diameter piled from the biggest (at the bottom of the axis A) to the smallest (at the top of the same axis). The problem is how to form the same pile in axe C, taking into account that the rings must move from one to the other axis of the game with certain conditions (for example, it is not possible to leave a ring on the table or hold it while another is being moved). This is done by following two rules: (a) to move the rings one by one and (b) never to arrange a bigger ring on a smaller one. The Tower of Hanoi has been applied during four repeating sessions with an interval of one to seven days between sessions (Spreen and Strauss, 1998), which allowed researchers to observe several issues such as the development of a planning strategy, the long term storage of successes and failures during the resolution, and the benefit the patient takes from their own experience, among other relevant aspects. This model of tower tasks has been applied as a problem solving and executive functions test (Numminen et al., 2001).

In the research showed here it was used a commercial version of the Tower of Hanoi. It was supposed that the participants who worked with the Tower along the training sessions would be able to solve increasingly complex instances with adequate pedagogical support. It is understood here that adequate pedagogical support should be a kind of teaching which (a) works according to cognitive neuroscience and the relational framework of anthropology, (b) respects diversity, and (c) generates effective didactic tools. The level of complexity is defined as the quantity of rings each subject was working with, for example if the patient was working with five rings the

<sup>4</sup> Even though Newman et al. refer specifically to the Tower of London, we consider that their hypothesis can be expanded to similar tower tasks like the Tower of Hanoi

level of complexity was considered to be five. Two crucial issues in our research were: 1. The possibility to learn to solve the task (independently from the quantity of movements and the time consumed in the task), and 2. The quantity of movements of the execution: it was supposed that fewer movements and a successful execution mean a higher efficacy of execution.

Results from our research showed that during the pre-test the patients were incapable to solve the tower with a five-ring complexity. Pre-test consisted in a single session of traditional assessment, in which the role of the examiner (MAB) was limited to explaining to the patients the rules and the task objective with no other kind of intervention but the observation of the patients' behaviour. This mnemonic learning context can be called "traditional context".

During the training sessions the same examiner worked with the patients following the precepts of dynamic assessment (Bacigalupe et al., 2011), beginning the practise with a minimal number of rings and progressively increasing the level of complexity by adding more rings according to the particularities of each patient's performance. This increment in complexity was carried out with adequate guidance and intervention from the examiner. It is possible to call this learning context "dynamic context". Along the sessions the patients were able to improve not only the level of complexity and completeness of the task but also their self-monitoring. The post-test consisted in a similar session to the pre-test in a traditional context but each patient was asked to solve the tower with the level of complexity that they had reached during the training. This means that if they had solved the tower successfully with three rings and not with four or five rings, the post-test consisted in solving the tower with three rings. It is noteworthy to observe the particular way each patient was achieving task goals, with an own rhythm and idiosyncratic style of learning. While their learning progressed, each participant was developing a new relationship with his environment (the material and the examiner), a co-constructing relationship in which each one, the environment and the patient, modified each other.

Patient 1 was able to achieve the optimal solution of the task with two rings independently, which was an important learning result considering their constant impulsivity, easily fatigue, and permanent lack of confidence in his possibility of progress, apart from his executive dysfunction. During the training sessions he was able to recognize the times he was breaking the rules and he achieved the task with five rings but with the permanent assistance of the examiner.

Patient 2 achieved the optimal solution without any prompting from the examiner with two rings, and with the assistance of the examiner he was able to improve his execution with more rings including the five ones. Sometimes his language was dissociated from his action, showing dysexecutive problems. During the sessions he

could improve his memory of the rules and kept the objective in mind. His self-regulation and persistence in action achievement were improved from the first sessions to the post-test.

Patient 3 got the 4 rings level independently in the post-test. During the training the patient showed that the use of verbalization helped the direction of his action; besides, he achieved the level of five rings with the assistance of the examiner. From a behaviour characterized by the persistence in violating the rules in the pre-test, the patient was getting control on his action and self-regulation through the sessions, remembering the objective and the rules to follow.

Patient 4 showed a particular performance characterized by impulsivity and concrete thinking, and a relative rejection to be prompted by the examiner; therefore the assistance was rather cautious and takes more the form of following his line of thinking that openly helps him to change it. Even so, he was able to optimally solve the tower with 2 rings the first training day, and continue improving his performance but with an excessive number of movements and committing lots of mistakes. The post-test showed a complete absence of recognition of having worked with the tower before and no memory of the rules; but, once the rules were repeated, his performance showed learning: he achieved the 5 ring level but with some mistakes that required some external help and lots of unnecessary movements to get the final solution.

The performance of the patient 5 in the pre-test was similar to the rest of the participants, with no possibilities to think in a valid strategy to solve the problem and difficulties to retain the rules and the objective. During the training the patient was able to make a significative progress from the 2 rings difficulty to the 5 rings solution and got a progressive self-regulation in following the rules and achieving the objective. The post-test showed a stunning response solving the 5 rings difficulty of the task in the second chance without help nor errors; and he was able to get a kind of learning transference through solving the tower in an inverse direction. He showed a capability of *deutero-learning*, mental flexibility and learning from his own experience.

In comparison, while patients 3, 4 and 5 were able to learn the task with a 5 rings complexity, patient 2 achieved the 5 rings level with much more difficulties and patient 1 got a minor level of complexity of the task. Besides, the participants who achieved the 5 rings level of complexity of the task showed interindividual differences, showing that patient 4 was the less efficient (more movements to solve the same complexity level); the performance of the patient 5 was the most successful because he was able to solve the maximum level of difficulty with total independence of the examiner help and was able to transfer his learning by solving the tower in an inverse form.

The results allow to conclude that the participants not

only learned the task (*proto-learning*) but also improved their execution with practise and training (*deutero-learning*) and reached some level of flexibility and metacognition, which was different from patient to patient. It is suggested here that this behavioural change depended, at least in part, on the context (the “dynamic context”) created by the examiner-participant relationship, the way the examiner prompted their execution and the way they interacted to direct the participant action.

## Conclusions

Understanding cognition as extended or mediated means is adopting a fundamental methodological and epistemological decision. This not only implies consequences in the philosophical postures about the mind and research in cognitive sciences but also has social and ethical derivations.

In the field of education one of the consequences of this perspective is found in the role of educators as learning mediators or vygotskian scaffolds, working on the learner’s zone of proximal development and promoting an active inclusion of people in their culture. Another consequence of this perspective can be found in medical sciences, in which a systemic point of view can consider that people are not ill *per se* but they are ill only in relation to an environment which surrounds and conditions them. This means that the concept of health and illness depend on a given cultural perspective. Therefore, medical sciences are interested not only in the patients but also in their environment, and look into the social and physical factors which can influence the loss of the balance that frequently defines the term health.

Delineating an idea of “mental health” requires two explanations: 1. To understand the system as healthy or ill, according to the diagnostic criteria of “normality” and “abnormality”, and 2. The researcher should accept that the criteria of “normality” and “abnormality” are closely related to a consensus on acceptance and rejection of certain behaviours, which arise from a co-existence of consensual coordination.

This means that “the idea of mental health” is conceivable only in the ambit of the social dynamics which delineate it. In other words, this idea depends on the subject or participants who experience it and the context of recurrent emotional contradictions. This form of learning and showing emotions is what finally can or cannot make people ill.

Attempting to link learning and “cure”, and attempting to understand whether a cognitive system works adequately implies understanding when and how somebody’s behaviour becomes part of a world of meaning which is pre-existent or new and consensual. It is relevant to this perspective to point out that representations no longer have a central role that “intelligence” is no longer responsible for solving a problem or manipulating several

material resources, even though it is the capacity to enter a shared world. This means that the idea of this paper is beyond the measurement of the benefit of changes in the scale and time of the performance in the resolution of specific tasks. The authors’ point of view goes beyond in the same direction but comprising the temporality of living in a shared world from where the social phenomenon emerges. The goal is to find an endogenous activity which matches with the optimal codification of the environmental regularity; in short, to find a cognitive system in which the endogenous and exogenous phenomena are defined by a viable link.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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