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# Emergency Department: Effectiveness of a Referral Intervention for High Utilizers

Tina Jee Yung Kang-Lim

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Emergency Department: Effectiveness of a Referral Intervention for High Utilizers

by

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Presented to the Faculty of the

Graduate Department of Clinical Psychology

George Fox University

in partial fulfillment

of the requirements for the degree of

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in Clinical Psychology

Newberg, Oregon

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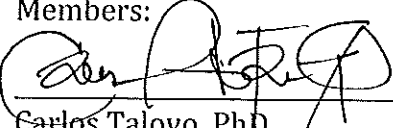
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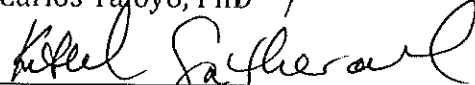
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Emergency Department: Effectiveness of a Referral Intervention for High Utilizers

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**Abstract**

This research examined the impact of a referral intervention for patients with high utilization of the Emergency Department (ED) for non-emergent care. The referral intervention was offered by the ED provider who provided the patient with feedback regarding their utilization along with a referral to outpatient services including: primary care physicians, mental health services, and brochure of available resources in the local area. This study used archival retrospective data, and compared frequency of ED visits pre-intervention and referral to post-intervention frequency of visits and length of time between intervention and next visit. Following the intervention, the participants were classified as either responders or non-responders based on their recidivism. An independent sample t-test showed that the responder group had a significant decrease in number of visits to the ED during the post-intervention period. Additionally, the responders had a significantly longer lag time before they returned to the ED as compared to the non-responders. The referral did not significantly increase patients' visits to their

primary care physician/behavioral health consultant. Therefore brief-ED based intervention may be useful in reducing recidivism in the ED.

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**Table of Contents**

|   |      |
|---|------|
| Approval.....                                     | ii   |
| Abstract .....                                    | iii  |
| Acknowledgements .....                            | v    |
| List of Tables .....                              | viii |
| Chapter 1 Introduction .....                      | 1    |
| Health Care Challenges .....                      | 1    |
| Why do people use the Emergency Department? ..... | 1    |
| Access.....                                       | 2    |
| Psychological distress .....                      | 2    |
| Chronic distress .....                            | 3    |
| Chronic Pain in the Emergency Department .....    | 4    |
| Rationale for Study .....                         | 6    |
| Chapter 2 Method.....                             | 8    |
| Setting.....                                      | 8    |
| Participants .....                                | 8    |
| Instruments.....                                  | 8    |
| Medical record review .....                       | 8    |
| Brief consultation .....                          | 8    |
| Procedure.....                                    | 9    |
| Data Analysis .....                               | 9    |
| Chapter 3 Results .....                           | 10   |

|   |    |
|---|----|
| Participant Demographics .....                  | 10 |
| Descriptive Statistics.....                     | 11 |
| Participants who Received the Intervention..... | 11 |
| Intervention Outcome .....                      | 12 |
| Supplemental Analysis .....                     | 13 |
| Chapter 4 Discussion .....                      | 14 |
| References.....                                 | 17 |
| Appendix A: Curriculum Vitae .....              | 21 |



List of Tables

|   |    |
|---|----|
| Table 1 Mean Utilization of Age, Number of Pre-Intervention and Intervention Visit..... | 10 |
|---|----|

## **Chapter 1**

### **Introduction**

#### **Health Care Challenges**

America continues to make changes to a health care system that has shown itself to be non-sustainable; the most significant changes are seen in the Affordable Care Act (2010), which seeks to reduce the cost of care and provide better clinical outcomes while expanding coverage for the uninsured. As the healthcare industry struggles with the implementation of the new model, both the demand for services, and healthcare costs continue to climb. More specifically, an increasing number of people are using the Emergency Department (ED) for non-emergent medical needs, which increases healthcare costs as patients receive treatment in one of the most expensive levels of care (Nawar, Niska, & Yu, 2007; Salamon, Cowdry, & Barclay, 2007).

The Emergency Medical Treatment and Active Labor Act (EMTALA), which prevents hospitals from refusing services to patients regardless of ability to pay has added to the complexity of patient care by limiting an ED's ability to immediately refer patients to a more appropriate level of care. As a result, despite the discrepancy between the acuity of the presenting problem and appropriate level of care necessary to treat the problem, the number of visits continues to grow. In 2006 it was reported that over \$30 billion dollars was spent in hospital costs, in which approximately 4.4 million dollars could have been saved using by using other effective treatment modalities, (Jiang, Russo, & Barrett 2009).

The use of the ED for non-emergent care is a classic example of the mismatch between medical need and the most appropriate treatment modality.

### **Why Do People Choose the Emergency Department?**

**Access.** Patients come to the ED with a range of presenting problems; on a typical day, the providers are likely to treat everything from a low acuity cold virus to a serious injury or life-threatening illness. There are many reasons why patients choose the ED when they are in need of medical attention. Gindi, Cohen, and Kirzinger (2012) reported that almost 80% of those who visited the ED in the last 12 months did so because they lacked access to their primary care physicians. In addition, people who are uninsured and don't have a primary care physician come to the ED when they need immediate, after-hours attention or have an unexpected medical situation, (Smith-Campbell, 2005). As a result, ED services that are intended for emergent life-threatening situations are being utilized because they are accessible 24 hours a day and do not require payment for services. As such, the ED has become a hot spot for anyone needing care at any time of the day, for any condition, regardless of ability to pay.

**Psychological distress.** Lin, Burgess, and Carey (2012) surveyed 16,873 participants who had visited the ED, and found that serious psychological distress was highly correlated with the number of ED visits in young adults. Their findings supported earlier work by Byrne et al. (2003) who conducted a cross sectional analysis to explore variables predicting high ED utilization. They used the General Health Questionnaire (GHQ) to compare the responses of 100 high utilizers with a matched control group. Seventy percent of the high attenders scored a 3 or greater (indicating clinically severe psychiatric

morbidity) versus 40% from the control group. Participants who had a higher number of ED visits also had higher scores on the mental health section of the GHQ, suggesting that poor mental health may predict high ED use. In addition, the two groups differed significantly where high utilizer group had more psychological problems than the control group (11% and 1%, respectively).

Not surprisingly, patients who experience both mental health problems and chronic illness are more likely to use the ED for non-emergent care. Choi, Marti, Bruce, and Kunik (2012) showed that 67% of presenting problems in the ED were for chronic illness (rather than an acute or emergent condition). Of the patients presenting for treatment of chronic illness, 61% of them returned in a 12-month long period. In this study, the 24-item Hamilton Rating Scale for Depression (HAM-D) was used to assess depressive symptoms. Associations between number of ED visits and depression using the HAM-D were conducted at the baseline of the study, and again at 24-week follow-up. A multivariable analysis was used and they found significantly positive relationship with the number of ED visits with baseline HAM-D scores (0.05), and for patients who were Hispanic (0.58) and also between the ages of 50-59 (0.83) and 60-69 (0.56). Further, frequency of ED visits at the 24-week follow-up showed significantly positive association with the HAM-D scores (0.07), female (1.73), ages 50-59 (1.40), and pain frequency (-0.14). Highlighting the relationship between physical and mental health, the patients with higher recidivism also showed higher levels of depression.

**Chronic disease.** Patients with chronic disease show higher utilization of ED services. According to Geyman (2007), approximately 125 million Americans are suffering

from at least one chronic disease, such as hypertension, heart disease, and/or diabetes. The older population has the highest incidence of chronic illness with over 85% of adults, aged 65-79 living with at least one chronic illness (Paez, Zhao, & Hwang, 2009), and this number is projected to increase by 42% from 2003 to 2023 (DeVol & Bedroussian, 2007). O'Toole et al. (2010) explored the ED utilization in a population of homeless adults with chronic disease. This population is likely to experience significant barriers when attempting to access medical care and may perceive the ED is their only option. Supporting this hypothesis, they found that 32% of adults with chronic disease had non-emergent visits to the ED. When a matched sample of adults was enrolled in a primary care clinic program, there was a significant drop in ED utilization for non-emergent care.

The reasons why patients seek treatment in the ED for non-emergent care are complex and include access, psychological distress and chronic disease. A combination of psycho-education and referral to a more appropriate level of care may help patients receive the most effective and cost-efficient treatment.

### **Chronic pain in the Emergency Department**

The unique challenge of treating patients with persistent and chronic pain in the ED has been well documented and is beyond the scope of this current study. However, a brief overview is important because the number of patients with chronic pain continues to rise and they are likely to have high ED utilization. According to the National Center for Health Statistics, (2006, p. 71) approximately 76 million people live with chronic pain. The National Hospital Ambulatory Medical Survey (Nawar et al., 2007) highlighted the increased prevalence, and noted specific trends for persons between the ages of 22-49

(11%), 50-64 (13%), and 65-74 (11%). In a comprehensive literature review, Cornally and McCarthy (2011) found the most significant variables associated with patients who seek treatment in the ED for chronic pain include: older age, female, pain severity, and disability.

Extensive literature has been devoted to the complex etiology of chronic pain. Given the multiple determinants of the disorder, it is clear that patients with chronic and persistent pain would receive the most effective, evidenced-based, and cost efficient treatment in multi-disciplinary outpatient settings, rather than a mono-intervention of narcotic administration (Choi et al., 2012; Stokes et al., 2011; Turke, Swanson, & Tunks, 2008; Woodhouse, Peterson, Campbell, & Gathercoal, 2009).

In addition to being a less-effective treatment, the use of narcotics as a mono-intervention for chronic pain may increase the risk for substance abuse. Wilsey, Fishman, Tsodikov et al. (2008) examined the relationship between opioid abuse and psychological disorders in a population of patients reporting chronic pain. In their sample of 113 participants, 91 (81%) were shown to be at risk for opioid abuse examined through the Screener and Opioid Assessment for Patients with Pain (SOAPP). In addition, the presence of psychological symptoms (i.e., panic attacks, personality disorders, etc), accounted for 38% of the variance.

In another study done by Wilsey, Fishman, Ogden, Tsodikov, and Bertakis (2008), participants were selected if they had received opioid analgesics for chronic pain and visited the ED to obtain refill prescriptions. A 15-item survey exploring beliefs regarding barriers to managing pain in the ED was administered to 103 pain patients, 34 physicians, and 44 nurses. Results showed that all three groups perceived that treating patients with

chronic pain was a low level priority. Further, physicians believed that the patients were accessing ED services because they did not have a primary care physician. On the other hand, patients' believed that the low priority their pain received in the ED was due to the limited time the physicians had to evaluate their pain and that the physicians were unable to determine the etiology of the pain. Depending on a variety of individual factors, patients with chronic pain are likely to receive better care through a referral to a broader range of psychosocial treatment options than from pharmacologic treatment that increases the potential for abuse.

### **Rationale for Study**

The movement towards understanding patients holistically within the biopsychosocial model suggests that health can be best understood as a combination of biological, psychological, and social factors. As people continue to use the ED services for non-emergent needs, they may be reducing the likelihood of receiving appropriate treatment. Although patients with chronic pain have received the most attention in the ED utilization literature, there are other factors including access, psychological distress, and chronic disease that may contribute to high utilization for non-emergent care. Over the past several years, research has suggested that an ED-based referral to outpatient services is an effective intervention for patients with chronic pain that provides evidenced-based treatment while reducing utilization (Jurecska, Peterson, Turgesen, & Florea, 2012). This study expanded the previous intervention by not limiting such interventions to patients with chronic pain; rather, this study applied the referral intervention to all high utilizing patients who presented with non-emergent conditions to the ED of a general medical

center in a suburban community. The program was designed to explore the effects of a referral-based intervention for patients with a history of high ED utilization.

Hypothesis 1: A referral provided by the physician would reduce the number of ED visits following the intervention for patients who have the highest frequency of visits.

Hypothesis 2: A referral will lead to patient follow-up to outpatient care including primary care provider, during the intervention period or within the two months following the intervention.



## Chapter 2

### Methods

#### Setting

The program was an ED-based brief referral intervention provided in addition to treatment as usual (TAU). This quasi-experimental study was a program evaluation using retrospective data.

#### Participants

Participants consisted of 64 female and 35 male patients between the ages of 16-97 who were identified as high utilizers. Inclusion criteria included a minimum of three or more visits to the Emergency Department for non-emergent problems in the eight months prior to intervention. Each patient diagnoses were categorized under five clusters (chronic pain, infection, skeletal system, psychiatric care, and other).

#### Instruments

**Medical record review.** Participant information was gathered through a medical record review. Following identification based on utilization and acuity of presenting problem, the chart was flagged to indicate that patient would be eligible to receive referral intervention.

**Brief consultation.** When an eligible patient visited the ED for a non-emergent condition, the patient received TAU. In addition to TAU, the patient received a brief intervention during which the provider highlighted their ED utilization and encouraged them to seek consultation with their primary care provider and provided a referral for free

consultation at a local behavioral health clinic and a brochure explaining services. Each time a patient used the ED services, the visits were tracked and the physician repeated the referral.

### **Procedure**

A team of physicians, nurses, and behavioral health consultants were responsible for implementing the procedure. After the criterion for high utilization was established, medical records were reviewed and flagged according to the inclusion criteria. All identified were tracked through the system for 8 months. When a patient was seen in the ED, the physician provided a brief consult including: (a) feedback on ED utilization and psychoeducation on the importance of having a primary care physician, (b) a brochure on a local mental health clinic, and (c) a referral to their PCP or behavioral health services. The intervention took approximately 5-10 minutes with the patient in the ED.

If patients returned to the ED, the physician was instructed to continue TAU and repeat the intervention, reinforcing the benefit of using the available resources.

### **Data Analysis**

Descriptive data was analyzed to determine if there are significant differences between patients who responded to the intervention compared to those who continued their pre-intervention frequency of visits. Follow-up visits to the ED or patients' primary care provider was also collected using an independent samples t-test. The significance level for this study was set at  $p < .05$ .

## Chapter 3

### Results

#### Participant Demographics

A sample of 99 ED high utilizer participants (64 female, 35 male) were identified as high utilizers based on the inclusion criteria described in the Methods section. When these participants presented to the Emergency Department during the 6-month intervention period with a non-emergent condition, they received the intervention. Of the 99 participants, 33 presented to the ED within the 6-month period and received the intervention. A total of 3 responders were dropped in the final analysis because they no longer met inclusion criteria. Parametric demographics for the 99 participants are detailed in Table 1.

Table 1

*Mean, Standard Deviation, Minimum and Maximum values of Demographics*

| Demographic Variable                                 | <i>M</i> | ( <i>sd</i> ) | Min | Max |
|--|----------|---------------|-----|-----|
| Age  | 31       | (6.81)        | 21  | 43  |
| Number of pre-intervention visits ( <i>N</i> =99)    | 6.34     | (4.12)        | 3   | 35  |
| Number of visits during intervention ( <i>N</i> =33) | 1.39     | (0.86)        | 0   | 5   |

The majority of the 99 identified participants were Caucasian (81.8%), married (38.3%), Christian (58.6%), insured (72.7%), and unemployed (51.5%). Previous admission records were reviewed and participants' diagnoses were coded into five clusters according to the ED providers' assessment including: chronic pain, infection, skeletal system, psychiatric care, and other. Most participants had a primary care provider (89.2%).

### **Descriptive Statistics**

Data were analyzed to determine if there were significant demographic differences between the 33 participants who returned to the ED during the six-month intervention period versus the 63 participants who did not return. A Chi square test of independence revealed the groups did not differ with regard to gender,  $\chi^2(1) = 1.42, p = .23$ , ethnicity,  $\chi^2(1) = 0.61, p = .81$ , religion,  $\chi^2(1) = 0.79, p = .38$ , insurance,  $\chi^2(1) = 1.75, p = .19$ , marital status,  $\chi^2(2) = 0.54, p = .76$ , diagnosis,  $\chi^2(3) = 7.4, p = .06$ , number of visits pre-intervention,  $\chi^2(14) = 7.76, p = .9$ , attending physician at most recent consult prior to intervention period,  $\chi^2(18) = 24.88, p = .13$ , and whether or not they had a PCP,  $\chi^2(49) = 56.77, p = .21$ . However, employment did differ as a function of a group, with unemployed patients more likely to return to the ED for care,  $\chi^2(2) = 6.54, p = .04$ . Further, an independent-samples *t*-test was used and found that the mean ages of participants in groups 1 ( $M = 43.83, SD = 15.76$ ) and group 2 ( $M = 44.49, SD = 19.59$ ) did not differ significantly,  $t(97) = 0.13, p = .86$ .

### **Participants Who Received the Intervention**

From the original pool of 99 participants, 33 participants visited the ED during the six-month intervention period and received the referral intervention. A total of 22 patients

received the intervention one time and were classified as *responders* for the purpose of this study. The 11 patients who received the intervention more than one time (returned to the ED during the intervention or follow-up period) were identified as *non-responders*. A Chi square test of independence showed that the two groups (responders vs. non-responders) did not differ with regard to gender,  $X^2(1) = .082, p = .77$ ; ethnicity,  $X^2(1) = 0.091, p = .76$ , religion,  $X^2(1) = 0.97, p = .33$ ; employment,  $X^2(2) = 1.084, p = .58$ , insurance,  $X^2(1) = .363, p = .55$ ; marital status,  $X^2(2) = 0.000, p = 1.00$ ; number of visits pre-intervention,  $X^2(14) = 7.76, p = .90$ . An independent sample t-test further indicated, the mean ages of participants in responders ( $M = 43.05, SD = 13.21$ ) and non-responders ( $M = 36.36, SD = 9.93$ ) did not differ significantly,  $t(31) = -1.48, p = .55$ .

### **Intervention Outcome**

Of the 33 participants who received the intervention, 22 (responders) did not return to the ED during the six-month intervention period and/or during the two-month follow-up period.. The remaining 11 patients (non-responders) received the intervention but returned to the ED within the six-month intervention period and/or the two-month, post-intervention period for non-emergent care. Following the intervention, the responders who had no (0) returns to the ED were compared to the non-responders who returned an average of 1.91 ( $SD=1.51$ ). An independent samples *t*-test demonstrated that responders ( $M = 0$ ,) and non-responders 1.91 ( $SD = 1.51$ ) differed significantly in the number of ED visits during the intervention period and in the two months following the intervention  $t(31) = 22.45, p = .000$

An independent samples *t*-test demonstrated that responders ( $M = 0.84, SD = 1.18$ ) and non-responders ( $M = 1.13, SD = 1.13$ ) did not differ significantly in the number of PCP visits in the two months following the intervention,  $t(31) = 0.60, p = .552$ . This is a small effect ( $d' = .25$ ).

### **Supplemental Analyses**

In addition to exploring the frequency of ED visits between groups, we analyzed the average length of time between the intervention visit and the next visit for the two groups (responders vs. non-responders). The responders showed an average of 7.09 months ( $SD = 1.41$ ) between the intervention visit and the next visit to the ED. In comparison, the non-responders returned to the ED within 1.46 months ( $SD = .52$ ). An independent sample *t*-test confirmed the statistically significant difference between groups in time lapsed before returning to the ED,  $t(31) = -12.733, p = .008$ . The increased time between visits suggests that a behavioral health recommendation/intervention may be salient to the length of time between visits in addition to frequency of visits.

## **Chapter 4**

### **Discussion**

This study showed that a brief ED-based referral intervention might indeed be an effective strategy for patients with a history of high ED utilization. This study showed that the responders who did receive the referral intervention by an ED physician did significantly reduce the number of ED visits following the intervention. It is clear in the research that people continue to use the ED services for non-emergent reasons (Jiang et al., 2009). The results of this study reveal a cost effective treatment strategy to reduce high ED utilization that can be applied effectively. In addition, the outcome of this study is meaningful because it extends previous research regarding the development of an ED-based intervention in potentially reducing high utilization of the ED services (Jurecska et al., 2012) by expanding the intervention beyond the patients with chronic pain. This study showed that a brief referral intervention has the potential to impact patients presenting with a wide range of medical concerns in addition to patients experiencing chronic pain.

Another surprising but potentially important finding was the potential impact of the referral intervention on recidivism time, or the length of time between the referral intervention and the patients' next visit to the ED. This study found there was a four-fold increase in the length of time between the intervention and the "responder" patients' next visit to the ED as compared to the recidivism of the non-responders. This suggests that although a brief-ED intervention may not work for everyone, it may be effective for a

majority of patients from a similar demographic pool. And for the patients who respond to the brief intervention, it could impact their healthcare costs by reducing the frequency of their ED visits and extending the time between visits.

Finally, a referral and recommendation for follow-up to primary care physician or behavioral health consultant did not lead to a significant increase of follow-up to outpatient care including primary care provider or behavioral health consultant two months following the intervention. Therefore, despite previous studies that have shown that limited or no access to a primary care physicians' may be related to number of visits to the emergency department (Gindi et al., 2010; Wilsey, Fishman, Ogden et al., 2008), this study revealed patients who do have access to health care providers may not be maximizing their care from their primary care physicians or behavioral health consultant.

Overall this study shows a significant finding that patients who receive a brief referral will be less likely to return to the ED and if so, will wait longer than if they had not received the intervention. It also suggests that having access to outpatient providers alone may not reduce the number of visits to the ED.

Although this study provides important clinical relevance in understanding how to provide appropriate care to patients who are high utilizers, there are several limitations in this study. First, a non-probability purposive sample was used. Second, the intervention was not randomized and sample size was small. In addition, a control group was not utilized for this study, and as a result generalizability of the findings is limited.

Where this research created an ED-based brief referral intervention that did reduce recidivism in the number of ED visits, further studies examining the efficacy of this brief



intervention would help determine effectiveness and generalizability. Future research may benefit from examining various factors that potentially increase the likelihood of a patient returning to the emergency department. Once these factors are established, hospitals can create ED-based treatment protocols that can specifically address the needs of the patient in order to provide appropriate care. It may also be beneficial to follow-up with patients who do have access to their primary care physicians to better understand how to enhance patient care.

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Wilsey, B. L., Fishman, S. M., Tsodikov, A., Ogden, C., Symreng, I., & Ernst, A. (2008). Psychological comorbidities predicting prescription opioid abuse among patients in chronic pain presenting to the emergency department. *Pain Medicine*, 9(8), 1107-1117.

Woodhouse, J., Peterson, M., Campbell, C., & Gathercoal, K. (2009). The efficacy of a brief behavioral health intervention for managing high utilization of ED services by

chronic pain patients. *The Journal of Emergency Nursing*. 36(5), 399-403.doiL10.

1016/j.jen.2009.02.008

## Appendix A

## Curriculum Vitae

TINA J. KANG-LIM, M.S., M.A.  
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**EDUCATION**

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- 8.2010 to present     **George Fox University Graduate Department of Clinical Psychology**  
APA Accredited  
Newberg, OR  
(Psy. D. anticipated 2015)
- 8.2008 to 5.2010     **California Lutheran University**  
Thousand Oaks, CA  
**Master of Science, Clinical Psychology**
- 8.2002 to 5.2007     **University of Colorado – Boulder**  
Boulder, CO  
**Bachelor of Arts, Psychology**

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**SUPERVISED CLINICAL EXPERIENCE**

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- 11.2014 to Present     **Internship**  
Providence Medical Center – Bridgeport  
Tigard, OR
- Treatment Setting:** Primary Care site that emphasizes family medicine
- Population:** Includes a wide range of referrals including: depression, anxiety, bipolar disorder, grief/loss, gender issues, attention deficit/hyperactivity problems, cognitive issues, adjustment, trauma, etc
- Age:** 5-90+
- Responsibilities:** Individual (20-50 minutes), ADHD and cognitive screeners, consultation with PCPs/staff as well as interpreters for bilingual patients. Establishing Behavioral Health Integration, educating staff/PCPs about primary care behavioral health integration, and ongoing involvement in program development and care.
- Supervisors:** Joel Gregor, Psy.D., Vanessa Casillas, Psy.D.
- 8.2014 to 10.2014     **Internship**  
Providence Medical Center – Sunnyside  
Clackamas, OR

**Treatment Setting:** Primary Care site that emphasizes mainly family and internal medicine  
**Population:** Includes a wide range of referrals including: depression, anxiety, bipolar disorder, grief/loss, gender issues, attention deficit/hyperactivity problems, cognitive issues, adjustment, trauma, etc  
**Age:** 5-90+  
**Responsibilities:** Individual (20-50 minutes), ADHD and cognitive screeners, consultation with PCPs/staff as well as interpreters for bilingual patients  
**Supervisors:** Joel Gregor, Psy.D., Vanessa Casillas, Psy.D.

5.2012 to 5.2014      **Practicum II, pre-internship III**  
 Providence Newberg Medical Center  
 Newberg, OR

**Treatment Setting:** Primary Care site that emphasizes mainly family and internal medicine  
**Population:** Includes a wide range of referrals including: depression, anxiety, bipolar disorder, grief/loss, gender issues, couples counseling, attention deficit/hyperactivity problems, cognitive issues, adjustment, trauma, etc  
**Age:** 5-90+  
**Responsibilities:** Individual (20-50 minutes), couples (50 minutes), ADHD and cognitive screeners, consultation with PCPs/staff as well as interpreters for bilingual patients

**Primary Supervisor:** Carlos Taloyo, Ph.D, & Mary Peterson, Ph.D., ABPP  
**Supervisor:** Mary Peterson, Ph.D, ABPP specialty focus in general health psychology  
**Supervisor:** Carlos Taloyo, Ph.D. specialty focus in multicultural issues  
**Supervisor:** Marie-Christine Goodworth, Ph.D. specialty focus in chronic disease

9.2011 to 7.2012      **Practicum I**  
 Oregon State University Counseling and Psychological Services  
 APA Accredited  
 Corvallis, OR

**Treatment Setting:** University Counseling  
**Population:** College aged, continuing and higher education students  
**Age:** 17-25  
**Responsibilities:** Provided psychotherapy for enrolled students, received weekly supervision: individual and group, co-facilitated a process group therapy, participated in didactic training including: victims of sexual assault, gender issues, CBT, multicultural components, and substance abuse  
**Supervisors:** Amy J. Williams, Ph.D., Lilia G. Miramontes, Ph.D., Michelle D. Ribeiro, Ed. D., and Audrey L. Schwartz, M.S.

1.2011 to 5.2011      **Pre-Practicum**  
 George Fox University  
 APA Accredited  
 Newberg, OR  
**Treatment Setting:** Undergraduate university

**Population:** College aged  
**Age:** 17-22  
**Responsibilities:** Provided psychotherapy for university students, received individual and group supervision that focused on developing Rogerian therapeutic techniques  
**Supervisors:** Mary Peterson, Ph.D, ABPP, Rachel Mueller, Psy.D.

### **SUPPLEMENTAL CLINICAL EXPERIENCE**

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5.2013 to 5.2014      **Providence Newberg Medical Center**  
 Newberg, OR  
**Treatment Setting:** Emergency Department, Med/Surg, ICU  
**Population:** 5-90+  
**Responsibilities:** Provide risk assessment and mental health consultations after hours, consultation with law-enforcement, DBT phone calls, work in collaboration with a large multi-disciplinary team, call for placements if hospitalization is needed, maximize resources available in the area and discuss appropriate discharge plans, provide clear and professional written assessments, and deliver concise clinical presentations each week  
**Supervisors:** Bill Buhrow, Psy.D., Joel Gregor, Psy.D., & Mary Peterson, Ph.D, ABPP

5.2013 to 5.2014      **Willamette Valley Medical Center**  
 McMinnville, OR  
**Treatment Setting:** Emergency Department, Med/Surg, ICU  
**Population:** 5-90+  
**Responsibilities:** Provide risk assessment and mental health consultations after hours, consultation with law-enforcement, DBT phone calls, work in collaboration with a large multi-disciplinary team, call for placements if hospitalization is needed, maximize resources available in the area and discuss appropriate discharge plans, provide clear and professional written assessments, and deliver concise clinical presentations each week  
**Supervisors:** Bill Buhrow, Psy.D., Joel Gregor, Psy.D., & Mary Peterson, Ph.D, ABPP

### **RELEVANT POSITIONS AND EXPERIENCES**

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2.2013 to 5.2014      **Behavioral Health Crisis Consultation – Team Coordinator**  
 Providence Newberg Medical Center  
 Willamette Valley Medical Center  
 Newberg and McMinnville, OR  
**Treatment Setting:** Emergency Department, Med/Surg, ICU  
**Population:** 5-90+  
**Responsibilities:** Manage team of 18 qualified mental health professionals in administrative tasks, provide on going training, meet with different stakeholders (i.e., medical directors, ED staff/physicians, etc) to ensure high standards of



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|                          | service, keep up with administrative tasks, determine and track meeting minutes, collect on going data for evaluation, provide constructive feedback, and engage in problem-solving in dealing with conflict/team management |
| <b>Supervisors:</b>      | Bill Buhrow, Psy.D., Joel Gregor, Psy.D., & Mary Peterson, Ph.D, ABPP  |
| 3.2009 to 6.2009         | <b>Ventura County Behavioral Health – Research Assistant</b><br>Oxnard, CA   |
| <b>Responsibilities:</b> | Collected and analyzed data for the “Satisfaction Survey” which was filled out by patients in this clinic  |
| <b>Supervisor:</b>       | Jason Miller, Ph.D.  |
| 8.2008 to 5.2009         | <b>California Lutheran University – Graduate Assistant</b><br>Thousand Oaks, CA  |
| <b>Responsibilities:</b> | Assisted and graded assignments for four undergraduate courses in psychology, met with students individually for support/feedback, reviewed research assignments   |
| <b>Supervisor:</b>       | Rainer Diriwachter, Ph.D.  |
| 5.2007 to 3.2008         | <b>Trillium Family Services - Adolescent Treatment Specialist</b><br>Corvallis, OR   |
| <b>Responsibilities:</b> | Served in the psychiatric residential therapy for children and adolescents<br>Experience working with medication and crisis intervention   |
| 4.2007 to 9.2007         | <b>Benton County Health Services</b><br>Corvallis, OR  |
| <b>Responsibilities:</b> | Assisted with presentations on safety for groups of the developmentally disabled population  |
| 8.2006 to 12.2006        | <b>University of Colorado INVST –Teacher’s Assistant</b><br>Boulder, CO  |
| <b>Responsibilities:</b> | Acted as a facilitator and peer counselor for INVS 3932 “Community Leadership Internship”  |
| <b>Supervisor:</b>       | Seana Lowe, Ph.D.  |
| 1.2006 to 5.2006         | <b>University of Colorado Psychology Department -Research Assistant</b><br>Boulder, CO   |
| <b>Responsibilities:</b> | Helped organize data, provided relevant literature review for graduate assistant   |
| <b>Supervisor:</b>       | Angela Bryan, Ph.D.  |

#### **ACADEMIC EXPERIENCE AND LEADERSHIP**

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2010 to 2014      **Multicultural Committee - Member**

- George Fox University  
Newberg, OR
- Responsibilities:** Monthly meetings with larger student body to discuss multicultural issues including: psychotherapy, outreach, research, and training and awareness
- 2010 to 2012      **Student Council - Member**  
George Fox University  
Newberg, OR
- Responsibilities:** Participate in biweekly meetings to discuss issues or situations relevant to the student body, discuss and manage funds to improve training/program opportunities, organized banquet for the 4<sup>th</sup> years involving 100+ students, faculty, and staff
- 2010 to 2011      **Admissions Committee - Member**  
George Fox University  
Newberg, OR
- Responsibilities:** Participate in weekly meetings to review and discuss potential applicants for the Psy.D. program, interview potential candidates, participate in orientation day(s), provide on campus tours and hold Q & A for new students

## **RESEARCH EXPERIENCE AND PRESENTATIONS**

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- 2012 to 2014      **Emergency Department: Effectiveness of a referral intervention for high utilizers**  
*Dissertation Research*
- Description:** Is to examine the impact of a referral intervention for patients with high utilization of the Emergency Department (ED) for non-emergent care. Referrals are provided by ED physicians and are then tracked. This study used archival retrospective data comparing frequency of ED visits pre-intervention/referral to post intervention frequency of visits.  
**Defended: May 2014**  
Dissertation Chair: Mary Peterson, Ph.D, ABPP  
Committee Members: Kathleen Gathercoal, Ph.D., & Carlos Taloyo, Ph.D.
- Kang, T., Song, C., Hartman, T., Terman, J., Fish, R., Goldberg, E., & Peterson, M.** (Nov, 2014). Same time next week?: Reducing the frequency of non-emergent patient visits in the ED. Poster submitted for American Psychological Association Convention, Toronto, CA.
- Kang, T., Backstrand, S., Parker, T., & Goodworth, M.C.** (May, 2013). A 6-week pilot study evaluating the effectiveness of providing self-management skills for patients with chronic pain. Poster presented at the Oregon Psychological Association, Eugene, OR.
- Kang, T., Irvine, M., Ellis, C., & Peterson, M.** (Aug, 2012). The impact of self-awareness on

problematic drug use and its effect on treatment outcome. Poster presented at the 120th Annual convention of the American Psychological Association, Honolulu, HI.

**Kang, T.**, Becker, T., Bruschwein, H., & Peterson, M. (August, 2012). Gender differences in positive behavior outcomes through a Parent Advice Line (PAL). Poster presented at the 120th annual convention of the American Psychological Association, Orlando, FL.

Bruschwein, H., Becker, **T.**, **Kang**, T., & Peterson, M. (August, 2012). Improvements in child behavior increases with more adults in the home through a remote Parent Advice Line service. Poster presented at the 120th annual convention of the American Psychological Association, Orlando, FL.

## **EXTENDED EDUCATION**

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### **Certificate Program in Integrated Primary Care**

Fairleigh Dickinson University – 20 weeks program that is aimed to understand and apply basic principles of integrated care. Topics include: billing, record keeping, functional/strategic patient care, communication with primary care providers, practice standards, problem-based assessment and development

## **ASSESSMENT EXPERIENCE**

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16 Personality Factor Questionnaire, Fifth Edition (16PF Fifth Edition)

Adult ADHD Self-Report Scale (ASRS v1.1)

Behavior Assessment System for Children and Adolescents, Second Edition (BASC-2)

Boston Naming Test

Brief Rating Scale of Executive Function (BRIEF)

Brown Attention-Deficit Disorder Scales

Conner's 3 ADHD Index

Comprehensive Trail Making Test

Controlled Oral Word Association Test FAS

Delis-Kaplan Executive Function System

Dementia Rating Scales

Denver Developmental Screening Test

Diagnostic Interview for ADHD in Adults (DIVA)

Everyday Memory Survey

Finger Tapping Test

Generalized Anxiety Disorder Screener (GADS 7)

Geriatric Depression Scale

Grip Strength Test

Grooved Pegboard Test

Halstead Category Test

Halstead-Reitan Neuropsychological Test Battery

House-Tree-Person (HTP)

Millon Adolescent Clinical Inventory (MACI)  
 Millon Clinical Multiaxial Inventory, Third Edition (MCMI-III)  
 Minnesota Multiphasic Personality Inventory, Second Edition (MMPI-2)  
 Minnesota Multiphasic Personality Inventory- Adolescent (MMPI-A)  
 Minnesota Multiphasic Personality Inventory, Restructured Form (MMPI-2-RF)  
 Montreal Cognitive Assessment  
 Patient Health Questionnaire (PHQ)  
 Patient Health Questionnaire for Depression (PHQ-9)  
 Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4)  
 Personality Assessment Inventory (PAI)  
 Repeatable Battery for the Assessment of Neuropsychological Status (RBANS)  
 Rey-Complex Figure  
 Roberts-2  
 Rorschach Inkblot Method  
 Seashore Rhythm Test  
 Sensory-Perceptual Examination  
 Speech Sounds Perception Test  
 Strong Interest Inventory  
 Tactual Performance Test  
 Test of Memory Malinger (TOMM)  
 Thematic Apperception Test (TAT)  
 Trail Making Test A&B  
 Wechsler Adult Intelligence Scale - 4 Abbreviated  
 Wechsler Adult Intelligence Scale, Fourth Edition (WAIS-IV)  
 Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)  
 Wechsler Individual Achievement Test, Third Edition (WIAT-III)  
 Wide Range Achievement Test (WRAT-4)  
 Wide Range Intelligence Test (WRIT)  
 Wide Range Assessment of Memory and Learning, Second Edition (WRAML2)  
 Wisconsin Card Sorting Test

## PROFESSIONAL AFFILIATIONS

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|                 |  |
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| 2010 to Present | <b>American Psychological Association, Student Affiliate</b> |
| 2012 to Present | <b>Oregon Psychological Association, Student Affiliate</b>   |
| 2012 to Present | <b>Division 38: Health Psychology</b>                        |

**\*References available upon request**