An-Najah National University

Faculty of Graduate studies

The Effectiveness of Psychological Treatment of Injection Phobia by using Video gaming and visual distraction among Children: Experimental study

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Dedication

Every step on the road to success we need people to support us until we reach the end of the road. Especially those close to our hearts, my humble effort which I dedicate with all my love to

My Mother and Father

Who supported me with all love, encouragement and prayers day and night, and dispense all means of comfort to achieve this success.

My sister (Mai)

The one who has shared with me every moment since I started my studies until now, from my heart I thank her for the support, love and help.

My spiritual father (Uncle Muhammad)

Whom I consider myself to be his daughter and proud that he was and still my strong supporter in all my times and moments of my life.

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الإقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

The Effectiveness of Psychological Treatment of Injection Phobia by using Video gaming and visual distraction among Children: Experimental study

أقر بأن ما اشتملت عليه هذه الرسالة إنما هي نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وأن هذه الرسالة ككل، أو أي جزء منها لم يقدم لنيل أية درجة أو لقب علمي أو بحثي لدى أية مؤسسة تعليمية أو بحثية أخرى.

Declaration

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name: اسم الطالب: دانا مهند يوسف الشامي

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List of Abbreviations

NRD	Needle Related Distress
I.V	Intra Venous
I.M	Intra Muscular
CLS	Child Life Specialists
Mypas	Modified Yale Pre operative Scale
VAS	Visual Analogue Scale
Mops	Modified Objective Pain Score
BIFS	Blood Injection Fear Scale
SC	Subcutaneous
CD-ROM	Compact Disc -Read Only Memory

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Abstract

Background

Fear of injection or needle phobia is the intense fear of medical procedures involving injections or hypodermic needles, termed trypanophobia. Children suffering from this often debilitating disorder may experience symptoms such as hypertension, rapid heart rate or heart palpitations, and even fainting or injection phobia in children.

Aims

To evaluate the impact of the psychological treatment onthe levelofinjection phobia among a sample of children from Jenin and Tulkarm cities. It also aimed to measure the level of injection phobia among children referring to the pediatric outpatient clinics.

Methods

For the current research, experimental design was employed. Two hospitals were chosen in the cities of Jenin and Tulkarm. The clients were seen in the two government hospitals' pediatric outpatient clinics. The research population consisted of all children aged 8-12 years who referred to pediatric clinics. Approximately 50 children from the two hospitals were

chosen. An additional 50 children were also injected without using the Psychological techniques; the two groups after the injection procedure were contrasted with the level of anxiety among them.

Results

The findings showed that the level of injection phobia was moderate in the experimental community after psychological treatment using video gaming and visual distraction, as the mean response to the total score was moderate (3.36). In addition, the levels of injection phobia and blood phobia domains were moderate, as the means of response were (3.35, 3.36) respectively with regard to the control group; the findings showed that the degree of injection phobia was high in the control group without using video games and visual distraction, as the mean response to the total score was high (3.82). Furthermore, as the means of response for the total scoreof injection phobia and blood phobia were (3.84, 3.80) respectively, the level of injection phobia and blood phobia domains were high.

The findings showed that there were statistically important variations ($p \leq 0.05$)between the experimental and control groups in favor of the experimental group in the overall score of injection phobia and its domains (the lowest means). The results showed that there were statistically significant differences in the total injection phobia score among children between experiments at ($p \leq 0.05$).

Conclusion

For both sexes and different ages, the fear of needles and injection phobia are challenging and common conditions among children. By using video games and distractions in contrast with conventional therapy, psychological treatment of injection phobia seems to be more successful. Our key findings showed that the use of video games and visual distractions increases the effects of injection phobia reduction.

Keywords: Injection phobia; Video gaming;Visual distraction.

Chapter One
Introduction

1.1 Background

In their different experiences with health services, infants and teenagers are exposed to needles. More generally, infants' initial sensitivity to needles happens when they undergo regular immunizations for health maintenance. However, when making a wound sutured, when having an intravenous injection initiated for care or when enduring a lumbar puncture, they may often be exposed to needles (Birnie et al., 2014).

According to (Orenius et al, 2018), for such operations, such as joint punctures and intraarticular corticoid injections, chronically ill children can need frequent therapies and blood sampling, causing the child to suffer severely. Research has indicated that sick children state that needle treatments are part of their most hated and traumatic expereince (Kortesluoma&Nikkonen, 2004).

Needle procedure-related anxiety may contribute to enhanced avoidance activity and efforts to prevent any future needle exposure (Sokolowski et al., 2010). Individuals with elevated levels of needle anxiety and already have underlying injection-requiring health problems (e.g., diabetes) are a highly vulnerable population who seek to treat their apprehension in order to improve adherence to their treatment plan to minimize undesirable health consequences. A multidisciplinary Canadian committee released a

recommendation for clinical practice on treating vaccine discomfort in babies and children in 2010 (McMurtry et al., 2015).

Relevant phobias' psychiatric therapies rely on modifying the tripartite components of the reaction to pathological fear (i.e., psychology, actions, and cognition), in addition to the overall subjective perception of fear (Orenius et al., 2018).

A systematic analysis of the efficacy of therapeutic treatments for needle-related procedural discomfort and anxiety in children and adolescents was proposed by Uman et al.(2013). They indicated that distraction and hypnosis had been shown to have the strongest impact on enhancing the situation. The systematic examination and meta-analysis by (Birnie et al., 2014) confirm these observations, in which distraction and hypnosis have been shown to be successful in minimizing needle-related pain and anxiety.

The efficacy of exposure-based clinical and physical approaches for the treatment of elevated levels of needle anxiety or phobia and fainting in children and adults was tested by(McMurtry et al. (2015). Data suggest that exposure-based approaches have successfully decreased the apprehension of injections in adults and children (aged around 7 years).

Martin & Watling (2006) claimed that psychological distractiondistracts focus away from emotional stimulation towards other information, a type of attentional deployment.

In their study, McMurtry (2016) & Taddio (2015) have demonstrated that distraction may be a helpful method for therapists who deal with a range of pain disorders and are successful in minimizing adult unpleasantness encounters by improving emotion processing.

Distraction methods should be selected due to the age of the child: for infants, quick gestures and visual or auditory stimulation, such as blowing bubbles, can be used for children aged 6 to 18 months, rhymes and kaleidoscopes can be used. For children aged 2 to 3 years, cognitive techniques, such as counting and storytelling, may be utilized, and directed visualization and video games may be used for children aged 5 years (El-Sharkawi et al., 2012).

1.2 Problem statement

Fear of needles is used as a character entity that indicates an anxiety condition. After meeting a phobic substance (e.g. blood) or condition, an individual is extremely nervous and stressed (e.g. going to a doctor). "Trypanophobia" is an irrational and disproportionate distrust of needles. A vasovagal syncope caused by the "threatening" stimuli also accompanies this form of phobia.

In order to achieve a reduction in the degree of fear, certain research has proposed some forms of pharmacotherapy of needle phobia among patients to minimize needle phobia, such as oral premedication of benzodiazepines or certain other anti-anxiety drugs, in order to avoid the production of

needle phobia in difficult conditions, including blood and injury injections (Orenius et al., 2018). As well as Uman et al. (2013), certain distraction approaches were adopted as cognitive methods, such as counting and reading stories, can be used for children aged 2 to 3 years, and for children aged 5 years, guided visualization and playing videogames may be used. Antony et al., (2006), observed that in children and adults, apprehension of needles is very widespread. Via their annual immunizations, both infants get needles. Many with medical illnesses or issues would need to get even more needles for blood test or vaccinations.

Most children and adults are capable of resolving their concerns and are not discouraged from obtaining the necessary medications, vaccines, or blood test. But certain kids have anxiety requiring support and psychiatric care.

But if the anxiety is so severe that it keeps the person from having needles, it could be a disease known as 'needle phobia'.

1.3 Significance of the study

Carried out within the field of experimental studies, the present study is considered the first of its type in the West Bank of Palestine, utilizing video games and psychological treatmentto treat anxiety and phobia among children. The research was undertaken to establish a plan for the best management of children in the health care system and to reduce or mitigate adverse reactions such as violence, distress, and fear.

1.4 The aim of the study

The present study aimed at managing the phobia of injection among children aged 8-12 years by utilizing psychological treatment through playing videogames and visual distraction.

1.5 Objectives of the study:

1- To identify the level of psychological treatment of injection phobia by using video gaming and visual distraction among children (experimental group).
2- To identify the level of injection phobia without using video gaming and visual distraction among children (control group).
3- To determine the differences in the injection phobia among children according to group variable.
4- To determine the differences in the total score of injection phobia among children due to the (group, age and gender) variables and interaction.
5- To identify the most common type of injection among children in the governmental hospitals of Jenin and Tulkarm as a model.
6- To treat injection phobia among a sample of children from Jenin and Tulkarm cities.
7- To measure the injection phobia among children referring to the pediatric outpatient clinics.

1.6 Study Question

The main study question is:

- Can injection phobia be treated by cognitive behavioral therapy using playing video games and visual distraction and behavioral techniques?

1.7 Hypothesis

- The injection phobia can be treated by using playing video games and visual distraction techniques.

Chapter Two

Literature review

2.1 Review of relevant theoretical literature

For various occasions, infants attend pediatric practitioners, including getting immunization vaccines, child-friendly checkups, receiving medication for infectious conditions, and sometimes for fractured bones. Children can express numerous negative reactions during a hospital appointment, including behavioral deterioration, hostility and lack of cooperation, avoidance and difficulties healing from procedures (Hart &Bossert, 1994).

A considerable number of children and families are impacted by acute and persistent medical problems (Droter et al., 2011). This is partially attributed to medical care systems and a rise in technologies that drugs can only be administered by daily needle injections (Mohr et al., 2002). There are various forms of needle treatments that need to be improved by sick children, such as ambitions of the bone marrow, lumbar puncture, venipunctures, and vaccines.

Any degree of anxiety over invasive and unpleasant medical procedures such as needle injections is considered natural (Blount et al., 2009). The needle injection method does not cause any major distress for most children, as they have appropriate coping mechanisms to cope with these forms of procedures (Drotar et al., 2006). Needle injections may, however,

be a significant cause of anxiety and phobia for certain sick children (Scherer, 2007).

In medical conditions, needle injection techniques are increasingly used to diagnose and cure child. These procedures may, in certain situations, be a significant cause of anxiety and phobia for children and their future (Pao&Bosk, 2011).

The concern emerges as to how achild is better handled to stop or handle harmful responses such as violence, distress, and fear in the health care community. Therapeutic play is an experience that allows a child to convey feelings regarding traumatic experiences while encouraging typical growth (Koller, 2008). Throughout the educational, psychological, and behavioral literature, the effects of child life programs have been explored. Classical research has also shown reduced child and parent distress, improved collaboration during care treatments, and shorter medical stays following interventions in child life. More recently, interventions in children's lives have been shown to raise comfort levels and minimize anxiety (Barkey& Stephens, 2000) (Lacey, Finkelstein, &Thygeson, 2008).

While certain unpleasant responses are inevitable, regardless of a hospital appointment, it is necessary to minimize the fear of children. It has been found that kids treat medical circumstances with a sense of ease, accomplishment, and power when fear is reduced (Barkey& Stephens, 2000).

Child life professionals agree that psychosocial methods are the most successful type of treatments to be employed for children in a pediatric setting, such as procedure planning, behavioral management techniques, and complementary experiences (i.e., play). Proof exists to justify the usage of cognitive (i.e., preparation) (Felder et al., 2003).

Nonetheless, needle and injection phobia, needle and injection fear, needle-dependent anxiety, and needle-related pain are the most popular needle-related terminology used in the literature in reference to general injections.

2.2 Definitions of related Needle terms

2.2.1 Needle Related Distress

To explain the anxiety, multiple words are used. Fear-based response children can have to injections makes it impossible to define a dominant word (Thurgate&Heppell, 2005). In psychiatric literature, meanings of particular words such as (phobia, apprehension, and fear) are generally reasonably well-differentiated but not that well segregated. The explanations for the variation of the terminology used could be directly linked to the number of serious medical disorders under which children are identified with varying forms of injection procedures and multiple types of injection procedures involved with these conditions (Rzeszunt, 2011).

2.2.2 Phobia from Needles and Injections

Phobia:

The word phobia comes from the Greek sense (fear or dread), and several scholars characterize phobia as "an excessive fear of a benign situation or object" that is not necessarily harmful (Beutler, 2004).

Injection and needle phobias appear to be equally described and used in the diagnosis of particular phobia, which is a cluster of phobias that entails fear of blood, pain, needles, or other intrusive medical procedure (American Psychiatric Association, 2013). The answer of a person with needle injections is serious and can involve a vasovagal reaction with signs of lowered blood pressure and fainting during injections (Howe et al., 2011).

Injection phobia and Needle phobia are often used as both lay and clinical concepts in general psychiatric literature. Needle phobia continues to be described as "fear of medical procedures involving needle insertion into the body" (Thurgate&Heppell, 2005).

Psychological interventions help reduce the discomfort, anxiety, and distrust of needles in children. What children think or what they do before or after a needle is influenced by psychological interventions. They may be used for children or with maternal or psychiatric assistance, such as therapists, psychologists, or child development specialists (Kathryn et al., 2018).

Harm, anxiety, and phobia are normal during infancy due to medical procedures. Needles are regularly provided, particularly for vaccinations, from the first year of existence. Needle treatments are much more common for the diagnosis and control of their disorders in children with acute or persistent disease and are reported as the most distressing aspect of care. Sadly, in standard treatment, discomfort and anxiety related to surgical operations were also improperly handled. Severe infant pain and anxiety during needle operations was identified as particularly distressing and stressful for parents and healthcare professionals, as well as adversely influencing the child (Kennedy, 2008).

During needle procedures, the inability to properly control pain and discomfort may contribute to the creation of essential needle fears, which sometimes begin in early to middle childhood and continue through adulthood. In addition, apprehension of needles leads to hesitancy in the vaccine) and medical non-compliance (McMurtry et al., 2015). In view of the rising concern over increasing outbreaks of preventable and infectious diseases and the possible depletion of herd immunity, needle discomfort and anxiety are therefore important and urgent to resolve (Smith et al., 2014).

There has been a rising awareness in recent years of the need to better treat needle-related pain and anxiety. For the control of pain and anxiety during vaccinations, evidence-based clinical practice recommendations have been established. Current recommendations encourage the usage of a continuum

of cognitive and behavioral therapies for psychiatric interventions that have been found successful in mitigating discomfort during needle procedures (e.g. blowing bubbles, distraction). In addition, recommendations advocate not utilizing techniques that have been considered unsuccessful (e.g. providing reassuring remarks such as "don't worry") to minimize discomfort. The International Consulting Panel of Specialists of the World Health Organization for the Implementation of Immunizations Worldwide has recommended all of these techniques (WHO, 2015).

The solution to bringing in children with needle phobia (5 to 10 percent prevalence) went outside the reach of both reviews, with a high degree of needle anxiety, including avoidance of needle operations, severe discomfort if required to perform a procedure and/or disability from the fear. Inquiring about the experience of children with medical procedures and the extent of anxiety is important for directing treatment. For example, once the needle anxiety itself has been handled to prevent worsening the fear, no immediate needle operations, such as regular immunizations, could be best delayed. For example, if several people have to pin the infant down in order to be immunized, this may result in severe discomfort and strengthen potential actions of avoidance. On the other side, emergency needle operations (e.g., venipuncture in the emergency department) can need to be handled with pharmacological medication, such as an inhalational nitrous oxide or intranasal anxiolytics, in children with needle phobia. The usage of these drugs needs experience. In order to overcome

needle phobia in afflicted people, exposure-based counseling sessions with trained clinical providers (e.g. psychologists) are advised (Jessica, 2011).

2.2.3 Fear and anxiety

Anxiety and Fear may be appropriate and adaptive reactions to dangerous situations relative to phobia and are sometimes used interchangeably in psychiatric literature (Szmuk, 2005). Others say, on the other hand, that anxiety may be separated in many respects from fear:

- Fear was described in the past as an instant alarm response to threatening stimuli (Sadok et al., 2007).
- Some say that fear is typically oriented against a particular external object or circumstance, but the emphasis on anxiety is more common and appears to respond to an uncertain, distant or even unrecognizable danger (Bourne, 2010). "Most recently, in an Australian study, needle fear has been defined as a positive response to the question "Are you afraid of needles? (Wright et al., 2009).
- In addition to needle fear, anxiety is commonly used in the literature to describe the response children have to injections, such as "needle anxiety" (Rzeszunt, 2011), (Ayers, 2011).

2.2.4 Distress

Compared to other words, distress is described as "any kind of adverse effect including anxiety, fear, and stress" (Uman et al., 2008). Individuals may experience needle operations for the same pain treatments as

individuals without needle anxiety following good rehabilitation with needle fear. This study are now reviewing a framework for professional practice for vaccinations that would incorporate evidence-based pain control and lifetime needle aversion counseling to further close the existing treatment void (Taddio, 2010).

In the literature, there are many debates about the usage of needle phobia in relation to children relevant to the use of the alternate word distress (Humphrey et al., 1992). Blowing bubbles affects the distraction that lets children live with procedural discomfort (Fanurik et al., 2000). Pediatric diversion is also described as a cognitive or behavioral approach that pulls the focus of a child away from pain stimuli (Koller& Goldman, 2012). In multiple trials, the diversion has been used with children of varying age levels and different techniques. Distraction diminished the sense of pain in these studies; moreover, a substantial variation between groups was not observed, statistically. In a review, it was observed that distraction did not substantially decrease the experience of pain for children aged 5-18 in the experimental sample (Windich et al., 2007).

2.2.5Needle Related Distress, Needle fear, and Needle phobia

In general, foreign experiments of child and adolescent populations find reasonably high levels of Needle Induced Distress (NRD). The first research was performed in Canada by (Fradet et al., 1990) who noticed that (36-64 percent) reported mild to high pain during venepuncture in a combined population of (171) seriously ill and stable children aged (3-17)

forming (14%) of the variability in the distress ranking, with more distress behaviors arising in children aged (3-6) years than in children over (7) years. Age and distress were closely associated, compared with younger children (aged 2.5-6) showing higher levels of distress (Feddet et al., 1990).

There is somewhat more evidence on injection anxiety and needle phobia for healthy kids in relation to studies on Needle Induced Discomfort (NRD). In addition to one large-scale epidemiological analysis (N=10,496), studies have typically used fairly limited samples; research has shown that there is generally a lower degree of needle phobia of (8 percent) compared with apprehension and anxiety of injection among chronically ill and stable children (11-41 percent), (Howe et al. 2011), (Meltzer et al.,2008).

An analysis was conducted by (Guducu et al., 2017). As a realistic and cost-effective solution to minimizing perceived pain and tension during venipuncture in safe school-age children, the goal was to test a recent diversion intervention's efficacy. They observed that the intensity of children's pain correlated with venipuncture was greater in the control group than in the three study groups. It was calculated that the gap between the groups was important ($p>0.01$). Children's venipuncture-related cortisol levels in the test group were greater than in the three study groups. It was decided that the gap between groups was negligible ($p>0.05$). There was only a marginally positive association between the amounts of cortisol and the intensity of the pain ($p<0.05$). A procedure that nurses may be allowed

to utilize with venipuncture to achieve optimum pain and tension management is diversion intervention with multiple-colored flashlights.

Another research used the music listening strategy as a diversion to overcome venipuncture pain in the pediatric emergency department of (6-16) aged children, finding no substantial difference in pain levels of the experimental and control groups (Press et al., 2003).

Three separate diversion strategies (distraction cards, listening to music, and distraction cards + music) were reviewed by Diler (2017) on pain and anxiety reduction during phlebotomy in children. This research was a randomized, regulated, prospective experiment. The study was composed of children between the ages of 7 and 12 who required blood testing. The distraction cards, music, distraction cards + music, and controls were randomized into four classes. Two hundred children were included (mean age: 9.01 ± 2.35 years). No distinction was observed between the procedural pain levels recorded in the self, parent, and observer groups ($p = 0.72$, $p = 0.23$, $p = 0.15$, respectively). During phlebotomy, pain and anxiety relief were seen in all three methods; no statistically meaningful distinction was found, however.

In pediatric hematology-oncology patients scheduled for intravenous (IV) treatments, Angela and Joseph (2010) tested the effect of a developmentally relevant CD-ROM intervention on cognitive tests, anxiety, behavioral disturbance, and discomfort. Thirty kids, aged 7 to 18, were randomly allocated to either a standard category of medical care or a

standard group of medical care plus CD-ROM involvement. It was speculated that utilizing the CD-ROM would minimize the IV procedure's hazard evaluations, triggering reduced IV anxiety, less behavioral discomfort, and less pain during the IV phases. It was also predicted that in the CD-ROM care category, the intervention-enhanced secondary assessment would be shown in children and that they would comply with the IV procedure more effectively. To test the following dependent variables, self-report and observational ratings were used: primary and secondary evaluation, anxiety, mental discomfort, and pain. The findings revealed an important influence on the reduction of hazard evaluations after CD-ROM intervention ($p<.05$). Children in the CD-ROM intervention community were more successful in dealing with cognitive restructuring than in the control group ($p<.05$). Fear, mental discomfort, or pains were not shown to have any major consequences.

Another research by (Keri et al., 2002) sought to determine the efficacy of audiovisual distraction in minimizing discomfort associated with intramuscular immunization relative to a blank TV screen. During immunization, participants were randomly allocated to watch television (N = 29) or a blank TV screen (control) (N = 33) and videotaped. The kids got their suffering checked shortly following the injection. Videotapes is labeled for discomfort and distraction habits. T assessments determined mean discrepancies between classes, and chi-square tests compared proportions for self-reported discomfort of clinically important importance. For any discomfort or distraction interventions, no major group variations

were observed. The relative risk estimate in the distraction community for clinically severe pain was 0.644. (range: 0.23-1.80). Lower distraction rate (i.e. greater time looking at the TV screen). Both three intensity scales were linked to lower levels of pain. There was just a statistically meaningful association with quantitative pain assessment. Cartoons did not compete with the injection of needles by children or reduce their suffering. In the overall study, staring at the TV screen was linked to lower behavioral pain ratings.

Another study was conducted by (Kim et al., 2004). That study aimed to evaluate the efficacy of parental placement and diversion in pediatric patients experiencing venipuncture for discomfort, anxiety, and distress. To test 43 patients (20 experimental and 23 comparisons) who were 4 to 11 years old, an experimental-comparison community configuration was used. Parental placement and diversion is utilized by experimental respondents. Both participants rated their discomfort and anxiety; the child's fear was rated by parents and Child Life Specialists (CLS), and the child's distress was rated by CLS. Self-reported discomfort and distress between the two classes were strongly correlated ($p < .001$) though not substantially different. In experimental subjects, anxiety rated by CLS ($p < .001$) and parents ($p = .003$) was slightly lower. While no differentiation in pain was observed between the two classes, a substantial pattern in time was found ($p <.001$). With a primary advantage of reduced anxiety, the parental positioning-distraction intervention has the ability to increase favorable clinical performance. There is more analysis warranted.

According to a report by (Lindsey, et al. 2015). The purpose of the research was to see whether a computerized parent training program called "Bear Important" could help alleviate preschoolers' immunization anxiety. 90 parent-child dyads were randomly allocated to receive Bear Basics parent training plus diversion, distraction only, or control in a randomized controlled study.Bear Essentials improved parents' understanding of the effects of reassurance, details, and apologizing on children's procedural distress. Educated parents have used less reassurance and more distraction and deep breathing support. Children in the Bear Essentials group are more distracted and breathe deeply than those in other groups.There were no effects on child anxiety or pain measures.

Another study was conducted by (Franca et al., 2016). That study was directed at Needle-related procedures and the associated discomfort for infants, and distraction in blood-drawing centers offers perfect pain relief. Compared with low-tech diversion by a nurse, that study measured the efficacy of playing a video game during venipuncture. Half of the (200) children played Angry Birds on a portable screen, while a second, specially qualified nurse who sang to them, read a novel, blew bubbles or played with marionettes distracted the other half. In 16 cases (16 percent) in the hand-held device diversion community and in 15 cases (15 percent) in the nurse-led low-tech distraction group ($p = 0.85$), children indicated serious discomfort. In the two classes, the procedural performance rate at the first attempt was not different.

A prospective study was carried out by (Adeline et al., 2013). The study originally proposed that hypnosis can relief the discomfort and pain associated with dental anesthesia. Thirty children aged 5 to 12 were randomly allocated to 2 classes at the time of anesthesia to undergo hypnosis (H) or not (NH). Anxiety was measured using the updated Yale preoperative anxiety scale at research inclusion, initial consultation, installation in the dentist's chair, and at the time of anesthesia (mYPAS). A Visual Equivalent Scale (VAS) and an Adjusted Objective Pain Score (mOPS) were used after anesthesia to measure the pain encountered. In the H group, the median mYPAS and mOPS scores were considerably lower than in the NH group. In the H category, slightly more children had little or moderate discomfort. In children undergoing dental anesthesia, the study indicates that hypnosis could be effective in decreasing anxiety and pain.

Another study conducted by (Inal&Kelleci, 2012) sought to examine the impact of the strategy of diversion by looking at distraction cards/Flippits to minimize procedural pain and discomfort during blood drawing. The focus of children with diversion cards/ Flippits was distracted from different eye-catching patterns and shapes in this technique. During the blood draw process, the children were then asked questions regarding the cards that he or she would only respond to while he or she is closely inspecting the cards. A longitudinal, randomized controlled trial was performed in that study. The study was made up of 123 children between the ages of 6 and 12. Participants were assigned into two classes at random. Group 1 received no interference, although in the form of looking at

diversion cards/Flippits, Group 2 received distraction. Pre-procedural and procedural distress was measured by the parent and observer report using the anxiety measure from the Children's Anxiety and Pain Scales. Procedural pain was measured by infants, caregivers, and observer accounts using Faces Pain Scale-Revised. The findings indicate that there was no substantial change in pre-procedural distress. However, during the blood draw process, the study community had slightly lower amounts of discomfort than the control group. The study group has had considerably lower levels of anxiety than the control group.

Another study carried out by (McCarthy et al., 2010) sought to explore infant, adult, and procedural variables to describe child discomfort during a planned intravenous insertion while parents are their children's diversion coaches. Total of (542) children between the ages of (4 to 10) and their parents were interested. Questions created for this research assessed the age of children, gender, diagnosis, and ethnicity. Standardized methods were used to assess the familiarity of children with practices, attitude, attendance capacity, fear, communication style, and vulnerability to pain. Child size, standard coping reaction, and parent expectation of discomfort ($p < .01$) are factors describing mental, child-report, and parent-report interventions. A large number of mental, biological and parent-report anxiety measures ($p < .05$) have been clarified by the degree of parent distraction coaching. Kid impulsivity and special education support have also been greatly clarified by child pain self-reporting ($p < .05$). The child's agitation in the morning before the clinic, diagnosis of attention deficit hyperactivity

disorder or anxiety disorder, and pacing of planning for the clinic visit were additional factors describing cortisol reaction.

Chapter Three

Methodology

3.1 Study design

-Experimental design was used.

3.2 Study setting

- The data were collected from Jenin and Tulkarm cities, the clients were seen in the Pediatric clinics of the two government hospitals. All children who complained of fear from injections were eligible to be included.

3.3 Study population

The study population consists of children aged from the two government hospitals (8-12 years) referred to pediatric clinics.

Table (1): the distribution of the study sample according to demographic variables (n= 100).

Variables	Level of variables	Frequency	Percentage %
Group	Experimental	50	50
	Control	100	50
	Total	**100**	**100**
Age	8- 10 years	57	57
	11- 12 years	43	43
	Total	**100**	**100**
Gender	Male	47	47
	Female	53	53
	Total	**100**	**100**

3.4 Sample size and sampling

In the form of simple random sampling, the sample was chosen. We remained in the pediatric clinic and when the 50 experimental and 50 control groups were reached, the third child who matched the legibility was selected to be in the experimental or control group. Approximately 50 children were infused with video gaming and chosen as the experimental community. Also, another 50 children were injected without using the psychological techniques. The two groups were compared against the phobia level among them after the injection procedure.

3.5 Inclusion Criteria

- Children between the ages of 8 to 12.
- Programmed for injection as a course of his treatment; IM, IV, or SC.
- Have no mental disorders.
- Have no learning disorders or other conditions that would make it difficult for communication.
- No vision or neurological issues.
- Not previously under hospital care.

3.6 Exclusion Criteria

- Children with cognitive, visual or auditory impairment.
- Children with a behavioral problem.
- Children with physical disabilities that affect their ability to play video games.
- A sedative, analgesic, or narcotic substance history.
- Blind children.
- All children's and their families who refuse to participate in this study.

3.7 Data collection procedure and tool

Data collection was carried out in the period between August and September2020. The research population consisted of two governmental hospitals (Jenin and Tulkarm). Experimental design was adopted to compare between two groups; one group of children was treated by using the video gaming and distraction technique; the other comparative group was injected without using the treatment techniques. Face to face interview technique was carried out. Data was then coded and entered into the computer by the researcher who was helped by a computer technician. The data was double checked through a comparison between the printout and code sheets. No discrepancy was detected.

The parents of the children were called to agree and sign the consent form of participating in the current study; the treatment interview was held in the pediatric clinics of the two hospitals. In our situation; the child is already assigned to be given injection as a part of his or her treatment.There was a Blood / Injection Fear Scale (BIFS) used. In addition, to classify the study, a questionnaire on the social, demographic, and general health characteristics of the participants was also used. During our single interview and treatment session, the techniques of playing video games and distraction were used to convince the child to accept injection.

Before that we tried to gain his trust by playing with him. This was done through the use of 3D glasses helmets that shown the video games chosen by the child and his parents. It can display cartoon films, children's music, or 3D virtual reality games. The researcher met children in the Jenin and Tulkarm government hospitals in emergency and children's clinics during the morning shift, the period of meeting with the children was approximately 15 minutes. The researcher brought and applied the study tools to the children. Then they were given a symbolic gift to thank them for participating in the research.

"According to the original proposal, the Blood Injection Fear Scale (BIFS) consists of 20 items divided into two variables: the first is "fear of injections" (Items 1-12) and the second is "fear of blood" (Items 13-20). A 5-point Likert scale is used for responses (1 = strongly agree; 2 = Agree; 3 = neither agree nor disagree; 4 = disagree; 5 = strongly disagree).

Based on the Likert five point scales, means were used to interpret the results as the following:

- (1.80 and below) disagree strongly.
- (1.81-2.60) Disagreement.
- (2.61-3.40) Neither in agreement nor in disagreement.
- (3.41-4.20) Agree.
- (4.21- and above) Strongly agree.

3.8 Pilot Testing

Validity and reliability of the tools

Three experts who had research background and two qualified pediatrics professionals evaluated the questionnaire for validity purposes. Pilot testing was conducted before data collection since it was necessary to detect gaps prior to field implementation and to identify the time needed to complete the interview.The number of sample hypotheses examined expertise to the study's execution was five children, all of whom were excluded from the study's sample.The cronbach Alpha test was applied in order to ensure the reliability of the study instrument. The coefficient of reliability for the total score of injection phobia instrument was (0.83). Concerning the domains of phobia of injection and phobia ofblood, the values or reliability coefficient were (0.76, 0.71) respectively. These values are appropriate to achieve the study targets.

3.9 Ethical and administrative procedures

Agreement from the Institutional Review Board (IRB) was taken from An-Najah University. The purpose of the study was explained to the child's parent. The parent was informed as they have full right to refuse to participate in the treatment study or withdraw at any time during the treatment period. A consent form was signed by parents and a verbal approval obtained from the children.

3.10 Statistical analysis

For data entry and statistical analyses, the Statistical Package for Social Sciences (SPSS version 20) was used. The independent-samples t-test will capture, summarize, and interpret data and 95 percent of the confidence interval is coveted. Means, standard deviations, Independent t measure, ANOVA three-way, and percentages and frequencies.

Chapter Four

Results

The level of injection phobia and blood fear among the experimental and control groups among children.

Means and standard deviations were measured as shown in tables for each object and domain to which it belongs (2, 3). Means were used to interpret the findings according to the five Likert point scale as follows:

- (1.80 and below) very low level.
- (1.81- 2.60) low level.
- (2.61- 3.40) moderate level.
- (3.41- 4.20) high level.
- (4.21 and above) very high level.

1. The Results of injection phobia

Table (2): Means, standard deviations and the level of injection fear domain among children of the experimental and control groups (n= 50).

N	Group Items	Experimental			Control		
		M*	SD	Level	M*	SD	Level
1	I fear the pain of getting the injection	3.78	0.97	High	4.38	0.53	Very high
2	I've had poor previous experience with injection receiving	3.58	0.86	High	4.02	0.80	High
3	I avoid watching the nurse make the syringe ready,	3.50	0.76	High	3.98	0.51	High
4	I am scared to receive injections	3.80	0.93	High	4.46	0.71	Very high
5	I avoid seeing others get injections	3.40	0.93	Moderate	4	0.53	High
6	I avoid receiving injections	3.58	0.91	High	4.52	0.58	Very high
7	Needle size frightens me	3.18	0.94	Moderate	4.04	0.81	High
8	WhenI receive injections, I feel disgusted	3.28	0.76	Moderate	3.16	0.89	Moderate
9	I am concerned about the risk of seeing someone receiving injections	3.30	0.93	Moderate	3.90	0.51	High
10	I'm worried about the prospect of needing to have injections	3.68	0.84	High	4	0.45	High
11	After I receive injections, I faint	2.88	0.94	Moderate	3.12	0.96	Moderate
12	When I see others getting injections, I faint.	2.28	0.81	Low	2.44	0.76	Low
The total fear domain injection score		3.35	0.44	Moderate	3.84	0.32	High

*** Maximum degree of response (5) degrees; M= Mean; SD= Standard Deviation.**

The results of table (2) showed that after the psychological treatment by video gaming and visual distraction of the experimental community, the level of injection fear domain was moderate, as the mean of response for the total score was moderate (3.35). The highest response was on item (4) "***I scared receiving*** injections" because the mean response was high (3.80). While the lowest response was on the item (12***), "I faint when I see injections*** received by others," because the mean response was low (2.28). Regarding the control group, the results indicated that without using video gaming and visual distraction in the control group, the level of injection fear domain was high, as the mean response for the total score was high (3.84). The highest response was on item (6) "***I avoid receiving injections***" because the mean response was very high (4.52). Although the lowest answer was on the item (12), "***I faint when I see injections received by others,"*** since the mean response was high (2.44).

2. The results of blood fear:

Table (3): Means, standard deviations and the level of blood fear domain among children of the experimental and control groups (n= 50).

N	Group	Experimental			Control		
	Items	M*	SD	Level	M*	SD	Level
13	I hate seeing the blood of others.	3.48	0.97	High	4.12	0.59	High
14	I worry about the prospect of seeing the blood of others,	3.48	0.79	High	3.80	0.57	High
15	When I see my own blood, I feel disgusted.	3.30	0.86	Moderate	3.40	0.95	Moderate
16	I stop looking at the blood of my own	3.52	0.84	High	4.56	0.54	Very high
17	I fear the sight of my own blood.	3.42	0.91	High	4.64	0.69	Very high
18	When I see blood, I faint.	3.44	0.91	High	3.24	0.87	Moderate
19	I am affected by the smells in the room.	3.06	0.84	Moderate	3.20	0.70	Moderate
20	I feel disgusted when I see the blood of others,	3.18	0.80	Moderate	3.40	0.78	Moderate
The total score of blood fear domain		3.36	0.43	Moderate	3.80	0.40	High

*** Maximum degree of response (5) degrees; M= Mean; SD= Standard Deviation.**

The findings shown in table (3) showed that the level of blood fear domain was moderate in the experimental community after psychological therapy using video gaming and visual distraction, as the mean response to the total score was moderate (3.36). On the item (16) ***"I avoid looking at my own blood"*** the highest answer was because the mean of response was high (3.52). Whereas the lowest reaction was on the item (19) ***"I am impacted***

by smells in the room," since the mean reaction was strong (2.28).Concerning the control group, the results revealed that the level of blood fear domain without using video gaming and visual distraction in control group was high, as the mean of response for the total score was (3.80). The highest response was on the item (17) "***I am afraid of the sight of my own blood***"**,** as the mean of response was very high (4.64). Whereas the lowest response was on the item (19) "***I'm influenced by smells in the room*** "**,** as the mean of response was moderate (3.20).

3. Summary of the total results of injection and blood fear

Table (4): Means, standard deviations and the level of injection phobia and its domains in the experimental and control groups among children.

N	Group	Experimental			Control		
	Domains	M*	SD	Level	M*	SD	Level
1	phobia of injection	3.35	0.44	Moderate	3.84	0.32	High
2	phobia of blood	3.36	0.43	Moderate	3.80	0.39	High
The total score of injection phobia		**3.36**	**0.37**	**Moderate**	**3.82**	**0.30**	**High**

*** Maximum degree of response (5) degrees; M= Mean; SD= Standard Deviation.**

The results shown in table (4) showed that the level of injection phobia was moderate in the experimental group after psychological treatment using video gaming and visual distraction, as the mean response to the total score was moderate (3.36). In addition, the level of injection phobia and blood phobia domains was moderate, as the means of response were (3.35, 3.36) respectively for the total ranking. With regard to the control group, the findings showed that the degree of injection phobia was high in the control

group without using video games and visual distraction, as the mean response to the total score was high (3.82). Furthermore, as the means of response for the total score were (3.84, 3.80) respectively, the level of injection phobia and blood phobia domains were high.

Associationof experimental and control groups regarding the injection phobia

The distinct t test was used to determine the differences between the experimental and control groups in the total score of injection phobia and its domains, as shown in the table (5).

Table (5): Independent t test results for the differences in the injection phobia and its domains among children according to group variable (n= 100).

Group / Domains	Experimental (n= 50)		Control (n= 50)		T- value	p- value*
	Mean	SD	Mean	SD		
Phobia of injection	3.35	0.44	3.84	0.32	- 6.581	0.001*
Phobia of blood	3.36	0.43	3.80	0.39	- 5.230	0.001*
The total score of injection phobia	**3.36**	**0.37**	**3.82**	**0.30**	**- 6.756**	**0.001***

***Significant differences at (p ≤ 0.05), SD= Deviation Standard.**

The results shown in table (5) showed that there were statistically significant differences (p ≤0.05) between the experimental and control groups in favor of the experimental group (the lowest mean) in the total score of injection phobia and its domains, as shown in the figure (1). This

outcome highlighted the effectiveness of using video gaming and visual distraction in reducing injection phobia.

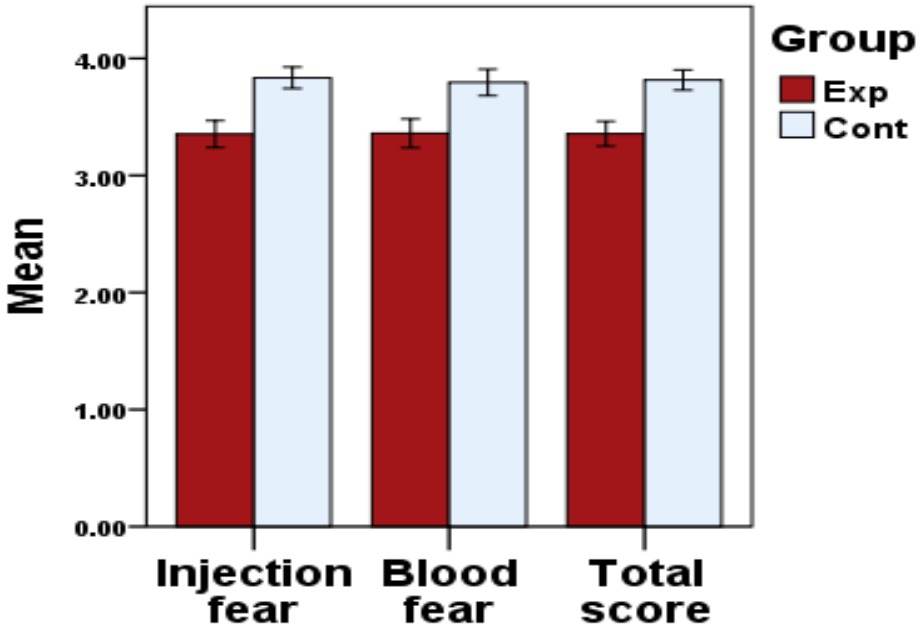

Figure (1): The means of response for the total score of injection phobia and its domains according to group variable.

Results of the association of the total score of injection phobia among children due to the (group, age and gender) variables and their interaction with the dependent variable

Means and SD were analyzed in table (6), to find the mean score of ; group, age, and gender. ANOVA Analysis Of Variance (ANOVA) was used in three ways to determine the differences in the total injection phobia score according to variables (group, age, gender) and interaction, as shown in Table (7).

Table (6): Means and standard deviations for the total score of injection phobia according to group, age and gender variables (n= 100).

Group Variables		Experimental group			Control group			Total		
		N	Mean	SD	N	Mean	SD	N	Mean	SD
Age	8-10	29	3.39	0.30	28	3.82	0.32	57	3.60	0.37
	11-12	21	3.31	0.46	22	3.81	0.29	43	3.57	0.46
	Total	50	3.36	0.37	50	3.82	0.30	100	3.59	0.41
Gender	Male	24	3.34	0.27	23	3.77	0.26	47	3.55	0.34
	Female	26	3.38	0.45	27	3.86	0.34	53	3.62	0.46
	Total	50	3.36	0.37	50	3.82	0.30	100	3.59	0.41

Table (7): Three way ANOVA results for the differences in the total score of injection phobia according to group, age and gender variables and interaction (n= 100).

Source	Type 3 sum of squares	DF	Mean squares	F	P-value
Intercept	1224.03	1	1224.03	10549.73	0.001*
Group	4.90	1	4.90	42.19	0.001*
Age	0.06	1	0.06	0.50	0.48
Gender	0.08	1	0.08	0.70	0.41
Group* age	0.01	1	0.01	0.08	0.78
Group* gender	0.05	1	0.05	0.42	0.52
Age* gender	0.06	1	0.06	0.47	0.49
Group* age* gender	0.35	1	0.35	3	0.09
Error	10.67	92	0.12		
Total	1302.35	100			

***Significant differences at ($p \leq 0.05$).**

The findings shown in table (6) showed that there were statistically significant differences ($p \leq 0.05$) between the experimental and the control groups in favor of the experimental group in the total injection phobia score among children. There were no major differences ($p \leq 0.05$) in the total injection phobia score among children due to age and gender variables.

No substantial differences were found between the interactions (group* age), (group* gender), (age* gender) and (group* age* gender) in the total injection phobia score among children ($p \leq 0.05$)

The most common type of injection used among children in the governmental hospitals of Jenin and Tulkarm as a model?

To answer to this question, frequencies and percentages were used as presented in table (8).

Table (8): Frequencies and percentages for the most common type of injection among children (n= 100).

Type of injection	F	%
Intravenous injection	81	81%
Intramuscular injection	19	19%

The results shown in table (8) revealed that intravenous injection was the most common type of injection among children in the governmental hospitals (81%) as demonstrated in the figure (2).

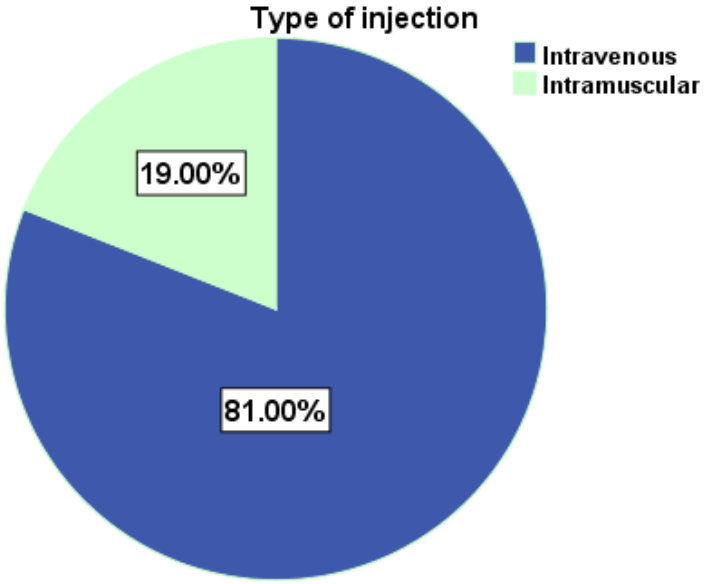

Figure (2): The most common type of injection among children in the governmental hospitals.

Chapter Five
Discussion

The researcher will discuss the main findings of results of this Experimental study titled, Psychological Treatment of Injection Phobia by using Video gaming and visual distraction among Children in the Jenin and Tulkarm cities, the clients was seen in the Pediatric clinics of the two governmental hospitals. All children who complained of phobia from injections was eligible to be included.

5.1. Discussion of the Main Findings

Analysis of the responses to experiment that the Psychological treatment of injection phobia by using video gaming and visual distraction among Children in the Jenin and Tulkarm cities, the clients was seen in the Pediatric clinics of the two governmental hospitals.

(1) The level of injection phobia, and blood phobiaamong children in the experimental and control groups:

A**. The domain of injection phobia in the experimental and control group.**

After the psychological treatment by using video games and visual diversion, the experimental group was moderate in the degree of injection phobia domain, as the mean of response for the total score was (3.35). I was terrified of receiving injections, as the mean response was high, the

highest reaction (3.80). Whereas the lowest response was I faint when I see others receive injections,as the mean of response was low (2.28).

The findings of this research are consistent with the results of the (Kortesluoma&Nikkonen, 2004). Studies have shown that needle procedures are identified by hospitalized children as one of their most hated and painful encounters the findings of this analysis are also consistent with (Sokolowski et al., 2010). Needle procedure-related fear can lead to increased actions of avoidance and attempts to remove any potential needle exposure.

The results of this study are inconsistent with the (Howe et al., 2011). The response of a person with needle injections is serious and may involve a vasovagal reaction with signs of lowered blood pressure and fainting during injections. The researcher agrees with the finding that children are particularly afraid of needles because anything sharp is not used to the feeling of their skin being pricked. They can handle needles much more readily by the time most individuals reach adulthood.For some, even into adulthood, a fear of needles remains with them. This fear can be extremely intense sometimes.

The results was revealed that the level of injection phobia domain without using video gaming and visual distraction in control group was high, as the mean of response for the total score was (3.84). The highest response was I avoid receiving injections**,** as the mean of response was very high (4.52). Whereas I faint when I see people getting injections.

The findings of this research are consistent with the results of the (Angela & Joseph, 2010). The findings showed an important impact on the reduction of hazard assessments after CD-ROM intervention ($p<.05$). Children in the CD-ROM intervention group were more successful in dealing with cognitive restructuring than in the control group ($p<0.01$).

Fear, mental distress, or pains were not found to have any major effects. The findings of this research are also consistent with the results of this study (Barkey& Stephens, 2000), (Lacey, Finkelstein, &Thygeson, 2008). More recently, interventions in child life have been shown to raise comfort levels and minimize anxiety.

The researcher is in agreement with the result the video games can actually help reduce stress and improve mental health. "When children play video games they actually have a lot of benefits to their heath or social health and their mental well-being.

The researcher is in agreement with the result that children avoid receiving injection, when kids are very young, blood tests and injections can be especially difficult. The researcher believes that the children in the sample are able to communicate due to their normal development according to their age.

B**. The domain of blood phobia in the experimental and control group.**

The results showed that the level of blood fear domain in the experimental group after using video gaming and visual distraction was moderate, as the

mean response to the total score was moderate (3.36). I resisted looking at my own blood, as the mean response was high, the highest response (3.52). Whereas I was affected by smells in the room with the lowest response, as the mean response was low (2.28)

The findings of this research are consistent with the results of the (American Psychiatric Association, 2013). Needle phobia and injection phobia tend to be similarly described and used in the diagnosis of specific phobia, a cluster of phobias that involves fear of blood, pain, injections or any intrusive medical procedure.

The findings of this study are also consistent with chronically ill children (Orenius et al., 2018) who may need frequent interventions and blood monitoring with some treatments, such as joint punctures and intraarticular corticoid injections, causing the child to suffer seriously.

The researcher is in agreement with the outcome that the sight of blood causes many individuals to feel queasy and lightheaded. Maybe they even pass out. Since the body overreacts to such factors, such as the sight of blood, the phobia is normal enough.

The results was revealed that the level of blood fear domain without using video gaming and visual distraction in control group was high, as the mean of response for the total score was (3.80). The highest response was I fear the sight of my own blood,as the mean of response was very high (4.64).

Whereas the lowest response was I am affected by the smells in the room,as the mean of response was moderate (3.20).

The findings of this research are consistent with the results of the (Inal&Kelleci, 2012). During the blood draw test, the study group had substantially lower pain levels than the control group. The experimental group also had substantially lower levels of anxiety than the control group.

The conclusions of this review are also consistent with the providers (Kennedy, 2008). Negatively impacting the child, significant child pain and distress during needle procedures are reported as highly distressing and challenging for parents and healthcare.

The researcher is in agreement with the result that the video games can actually help reduce stress and improve mental health. "When children play video games they actually have a lot of benefits to their heath or social health and their mental well-being.

The researcher is in agreement with the result that children afraid of the sight of their own blood, when kids are very young, blood tests can be especially difficult.According to the researcher, the normal development of the children in the study, vision of blood occurs, suggesting death in the children.

(2) The significant differences in the injection phobia among children according to group variable.

The findings showed that there were statistically important variations ($p \leq 0.05$) between the experimental and control groups in favor of the experimental group in the overall score of injection phobia and its domains (the lowest means). This outcome stressed the importance of using computer games and visual distraction when injecting and treating children to minimize phobia.

The findings of this research are consistent with the results of the (McMurtry et al. 2015). The findings indicate that exposure-based approaches have successfully decreased the fear of injections in children and adults (aged 7 years and older).Children are the future older children have the ability to interpret and communicate, according to normal growth.

The findings of this research are consistent with the results of the (Uman et al., 2013). In order to achieve a decrease in the level of anxiety, certain types of psychological treatment of patients with needle phobia have been suggested in some studies and can therefore be used for children aged 2 to 3 years to reduce needle phobia in these patients, such as counting and story reading, and for or children aged 5 years and above, guided imagery and playing videogames can be used. The investigator agrees with the outcome that video games can actually help reduce stress and enhance mental health.

(3) The significant differences in the total score of injection phobia among children due to the (group, age and gender) variables and interaction.

The findings showed that there were statistically significant differences between the experimental and control groups in favor of the experimental group ($p \leq 0.05$) in the overall injection phobia score among children. There were no major differences ($p \leq 0.05$) in the total injection phobia score among children due to age and gender variables.

The findings of this research are consistent with the results of the (Guducu et al., 2017). The severity of pain in children due to venipuncture was higher in the control group than in the three study groups. It was determined that the difference between the groups was important ($p>0.05$). Children's venipuncture-related cortisol levels in the control group were higher than in the three experimental groups. It was decided that the difference between groups was negligible ($p>0.05$). There was only a marginal positive association between the levels of cortisol and the severity of pain ($p<0.05$).

The findings of this research are also inconsistent with the (Windich et al., 2007). It was determined in a study that distraction did not substantially reduce the experience of pain for 5-18-year-old children in the experimental group.

In the total score of injection phobia among children due to age and gender variables, the researcher assumes that no major differences were observed ($p \leq 0.05$) in the total score of injection phobia among children because children of different age or gender fear injection because when children are very young, blood tests and injections can be extremely difficult.

The researcher believe that that there are no substantial variations in the total score of injection phobia among children due to age or gender variables at ($p \leq 0.05$), because the children the majority of children avoid receiving injection, when kids are very young, blood tests and injections can be especially difficult and fear.

(4)The most common type of injection used among children in the governmental hospitals of Jenin and Tulkarm as a model.

The result shown was revealed that intravenous injection was the most common type of injection among children in the governmental hospitals (81%).

The researcher is in agreement with the most common type of injection among children in the governmental hospitals, because IV injection is the use of a needle to insert a drug into the veins, and it is used when rapid absorption is needed, when the fluid cannot be taken by mouth, or when the medication to be given is too irritating to inject into the skin or muscles. Compared with IM, IV has a more rapid and comprehensive initial effect.

IV therapy helps the body to provide a greater concentration of nutrients or drugs.

In the case of interactions (group* age), (group* gender), (age* gender) and (group* age* gender), there were no substantial differences in the total injection phobia score among children ($p \leq 0.05$).The findings of this research are also inconsistent with the(Fradet et al., 1990) who found that (36-64% percent) reported moderate to high discomfort during venepuncture in a mixed group of (171) chronically ill and healthy children aged (3-17). Age accounted for (14%) of the variability in the distress ranking, with more distress behaviors occurring in children aged (3-6) years than in children over (7) years.

The researcher is in agreement with the results showed that no major differences were found in the total injection phobia score among children ($p \leq 0.05$). The researcher believe that there are no substantial variations in the total score of injection phobia among children due to age or gender variables at ($p \leq 0.05$), because the majority of children avoid receiving injection, when kids are very young, blood tests and injections can be especially difficult and phobia,because the fear in children of needles is a natural thing and one of the developmental mailstones in their age.

The findings showed that there were statistically significant differences ($p \leq 0.05$) between the experimental and the control groups in favor of the experimental group in the total injection phobia score among children. There were no major differences ($p \leq 0.05$) in the total injection phobia

score among children due to age and gender variables.The findings of this research are also inconsistent with the(Press et al., 2003)used the music listening technique as a diversion to minimize venipuncture pain in the pediatric emergency department of (6-16) aged group children, found no substantial difference in pain levels of the experimental and control groups.

The findings of this research are also consistent with the Angela and Joseph (2010) The results showed a significant impact on the reduction of threat assessments after CD-ROM intervention ($p<.05$). Children in the CD-ROM intervention group were more effective in coping with cognitive restructuring than in the control group ($p<.05$). Fear, behavioral distress, or pain were not found to have any significant effects.

The researcher is in agreement with the results showed thatthere were statistically significant differences ($p \leq 0.05$) between the experimental and the control groups in favor of the experimental group in the total injection phobia score among children, the key explanation, according to the researcher, is the success of the needle-phobia-reduction program that was implemented in the experimental group. In contrast to conventional therapy, using video games and distractions to treat injection phobia seems to be more effective.

5.2Conclusion

The phobia of needles and injection phobia are difficult and widespread problems for children of both gender and different ages. Psychological treatment of injection phobia seems to be more efficient by using video games and distractions in comparison with traditional treatment.

Our major finding was that using video games and visual distractions enhance the effects which reducing the injection phobia and blood fear. Our findings are in general agreement with other researchers that result emphasized the efficiency of using video gaming and visual distraction in reducing phobia when injecting, phobia of blood and treating children. Our results indicate that there was benefit that the efficiency of using video gaming and visual distraction in reducing phobia when injecting, phobia of blood among children.

Although research indicates that the using Video gaming and visual distraction among Children can reduce injection phobia and blood phobia. Further research has been needed to examine whether the using video gaming and visual distraction among Children would have an impact on reducing the injection phobia and blood phobia.

5.3 Strengths

- No previous studies have Psychological Treatment of Injection Phobia by using Video gaming and visual distraction among Child in the north district in West Bank –Palestine.

- The main strength of this study was that the researcher through facing many challenges that were experienced or observed in child care program.

5.4 Limitation of the study

The following were the presumed limitation of the study:

- The study will be in the north district (Jenin &Tulkarm governmental hospital) only and this may not be representative to other places in Palestine.

- Lack of recent studies, sources and references in the theoretical framework.

- Bad political and socio-economic situation.

- Corona virus (2019) disease spread in West Bank.

5.5 Recommendations

- To stop the deterioration of the disorder into needle phobia, introduce a training program for health care professionals (doctors, nurses). Epidemiological research on needle aversion and needle phobia should be performed in Palestine at the national level.

- Future research should differentiate between needle anxiety and diagnosable needle phobia.

- To decrease injection phobia and blood anxiety, introduce diversion strategies according to the age of the child, such as (blowing bubbles and reading stories and playing videogames....), Construction of a detailed national strategy to reduce childhood fear of needling.

- Further research on topics such as the function of tactile hypersensitivity and control of emotions in needle phobia is needed. In supporting their children, parents need guidance.

- Health care providers may play a pivotal role, noting that additional treatment is required. A dynamic syndrome that describes a spectrum ranging from needle fear is needle-related phobia.

- Generalization of the study findings on the whole governmental hospitals in Palestine to pay attention to psychological treatment methods to reduce the injection phobia.

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Appendix

Personal Data

Hospital Name:☐ Dr. Khalil Suleiman Governmental Hospital

☐Thabet Governmental Hospital

Age:☐---------

Gender:☐Male ☐Female

District: ☐Jenin

☐Tulkarm

Mother's education:☐< secondary ☐secondary

☐University ☐> university

Father's education: ☐< secondary ☐secondary

☐University ☐> university

Child's order in the family: ☐first ☐second

☐ Third ☐> third

Previous injections: ☐<2

☐2-4

☐>4

Family history of Injection phobia: ☐Yes

☐No

Type of Injection: ☐IV

☐IM

☐SC

Reason for admission:……

نموذج موافقة

فاعلية العلاج النفسي لرهاب الحقن باستخدام ألعاب الفيديو والتشتيت البصري عند الاطفال

العلاج النفسي لاضطراب الرهاب من وخز الابر بين الاطفال باستخدام العاب الفيديو والالهاء البصري: دراسة تجريبيةفي كل من محافظة (جنين، طولكرم) كجزء من متطلب برنامج الماجستير في الصحة العامة في جامعة النجاح الوطنية.

إن الهدف من الدراسة هو العلاج النفسي لاضطراب الرهاب من وخز الابر بين الاطفال باستخدام العاب الفيديو والالهاء البصري. وان لمشاركة اطفالكم أهمية كبرى لتحقيق هذا الهدف الذي نسعى جميعا لا جله. وقد تم اختياركم للمشاركة في هذا البحث. أود أن أشير المعلومات التي سوف يتم الحصول عليها سوف تعامل بسرية تامة ولن يتم ذكر اسم او أسماء الأفراد المشاركين وخصوصياتهم وسوف نترك لك الاختيار في الإجابة أو الرفض.

إن الباحث يدعوكم للمشاركة في هذا البحث راجيا منكم أن تسعوا قدر الإمكان لإعطاء أدق المعلومات وأكثرها صحة حسب رأيكم حتى تتوفر المعرفة الأفضل حول هذا الموضوع.

وأؤكد ثانية بأنة ليس هنالك أي هدف من الحصول على هذه المعلومات إلا لاستخدامها في مجال البحث العلمي ومن اجل مساعدة الاطفال لتخلص من الخوف من اخذ العلاج اللازم وخاصة الابرة

إن موافقتك على المشاركة ومشاركة اطفالكم في هذا البحث مهمة جدا ونحن نقدرها ونثمنها بدرجة عالية.

مع الاحترام

توقيع الباحث **توقيع ولي امر الطفل**

الطالبة: دانا الشامي

المشرف:الدكتور عدنان سرحان

البيانات الشخصية

اسم المستشفى : ☐مستشفى الدكتور خليل سليمان الحكومي

☐ مستشفى الشهيد ثابت الحكومي طولكرم

العمر : ----------

الجنس : ☐ ذكر ☐ أنثى

المنطقة : ☐ جنين ☐ طولكرم

تعليم الأم :<☐الثانوي ☐الثانوي ☐ الجامعة >☐الجامعة

تعليم الأب : <☐الثانوي ☐الثانوي ☐ الجامعة >☐الجامعة

ترتيب الطفل في الأسرة : ☐الأول ☐الثاني☐ الثالث <☐الثالث

الحقن السابقة : <☐2

☐2-4

☐< 4

تاريخ العائلة لرهاب الحقن : ☐ نعم

☐ لا

نوع الحقن : ☐الحقن الوريدي

☐ الحقن العضلي

☐ الحقن تحت الجلد

سبب الدخول : .....

Blood/Injection Phobia Scale

		Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
1.	**I'm afraid of pain due to receiving injection**					
2.	**I've previous bad experience about receiving injection**					
3.	**I avoid to watch the nurse prepare the syringe**					
4.	**I am afraid to receive injections**					
5.	**I am afraid to see others receive injections**					
6.	**I avoid receiving injections**					
7.	**Needle size frightens me**					
8.	**I feel disgusted when I receive injections**					
9.	**I worry about the possibility of seeing others receive injections**					
10.	**I worry about the possibility of having to receive injections**					
11.	**I faint after I receive injections**					
12.	**I faint when I see others receive injections**					
13.	**I avoid seeing others' blood**					
14.	**I worry about the possibility of seeing others' blood**					
15.	**I feel disgusted when I see my own blood**					
16.	**I avoid looking at my own blood**					
17.	**I am afraid of the sight of my own blood**					
18.	**I faint when I see the blood**					
19.	**I'm influenced by smells in the room**					
20.	**I feel disgusted when I see others' blood**					

		أعارض بشدة	أعارض	لا أعارض ولا أوافق	أوافق	أوافق بشدة
.1	أخاف الألم بسبب تلقي الحقن					
.2	لدي تجربة سيئة مع تلقي الحقن					
.3	أتجنب مشاهدة الممرض وهو يقوم بتحضير الحقنة					
.4	أخاف من تلقي الحقن					
.5	أخاف من رؤية الآخرين وهم يتلقون الحقن					
.6	أتجنب تلقي الحقن					
.7	حجم الإبرة يخيفني					
.8	اشعر بالقرف عند تلقي الحقن					
.9	اشعر بالقلق حيال احتمالية رؤية الآخرين وهم يتلقون الحقن					
.10	اشعر بالقلق حيال احتمالية الاضطرار لتلقي الحقن					
.11	يغمى علي بعد تلقي الحقنة					
.12	يغمى علي عندما أرى الآخرين يتلقون الحقن					
.13	أتجنب رؤية دم الآخرين					
.14	اشعر بالقلق حيال احتمال رؤية دم الآخرين					
.15	اشعر بالقرف عندما أرى دمي					
.16	أتجنب النظر إلى دمي					
.17	اشعر بالخوف من مشهد دمي					
.18	يغمى علي عندما أرى الدم					
.19	الروائح في الغرفة تؤثر علي					
.20	اشعر بالقرف عندما أرى دم الآخرين					

State of Palestine
Ministry of Health - Nablus
General Directorate of Education in Health

دولة فلسطين
وزارة الصحة- نابلس
الإدارة العامة للتعليم الصحي

Ref.: .....
Date:.....

الرقم: ٢٠٢/١١٠/٢٤
التاريخ: ٢٠٢١/٢/٢٨

الأخ مدير عام الادارة العامة للمستشفيات المحترم ،،،

تحية واحترام،،،

الموضـــوع: تسهيل مهمة بحثية

لاحقا لموافقة معالي وزيرة الصحة، يرجى تسهيل مهمة الطالبة: دانا مهند يوسف شامي، ماجستير صحة عامة، جامعة النجاح، لاجراء بحث رسالة الماجستير بعنوان:

"العلاج النفسي لاضطراب الرهاب من وخز الابر بين الاطفال باستخدام العاب الفيديو والالهاء البصري: دراسة تجريبية"

وتحت اشراف د. عدنان سرحان، حيث ستعمل الدراسة على القيام بالعلاج النفسي بين الاطفال باستخدام تقنية لعب العاب الفيديو (التي يختارها والديه) لاقناع الطفل بقبول الحقن وذلك في أقسام وعيادات الاطفال في:

- مستشفى جنين الحكومي - مستشفى طولكرم الحكومي.

حيث ان الطالبة ستلتزم بمعايير البحث العلمي والحفاظ على سرية المعلومات.

وتقبلوا فائق الاحترام،،،

د. أمل ابو عوض
مدير عام التعليم الصحي

نسخة: منسق ماجستير الصحة العامة المحترم/ جامعة النجاح

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An-Najah
National University
Health Faculty of medicine&
Sciences
IRB

جامعة النجاح
الوطنية
كلية الطب وعلوم الصحة
لجنة اخلاقيات البحث العلمي

REF:M AS 2/20/5

IRB Approval Letter

Study Title:

"Psychological Treatment of Injection Phobia by using Video gaming and Visual Distraction among Children: Experimental study."

Submitted by:
Dana M. Shami

Supervisor:
Dr. Adnan Sarhan

Date Submitted:
4th Feb. 2020

Date Approved:
17th Feb 2020

Your Study titled **"Psychological Treatment of Injection Phobia by using Video gaming and Visual Distraction among Children: Experimental study."** was reviewed by An-Najah National University IRB committee and was approved on **17th Feb 2020**

Hasan Fitiani, MD
IRB Committee Chairman
An-Najah National University

IRB

جامعة النجاح الوطنية

كلية الدراسات العليا

فاعلية العلاج النفسي لرهاب الحقن باستخدام ألعاب الفيديو والتشتيت البصري عند الاطفال دراسة تجريبية

إعداد

دانا شامي

إشراف

د. عدنان السرحان

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الماجستير في برنامج الصحة العامة، بكلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس- فلسطين.

2021

فاعلية العلاج النفسي لرهاب الحقن باستخدام ألعاب الفيديو والتشتيت البصري عند الاطفال دراسة تجريبية

إعداد

دانا شامي

اشراف

د.عدنان سرحان

الملخص

المقدمة

الخوف من الحقن أو الرهاب من الإبر يسمى "رهاب المثقبيات" هو الخوف الشديد من الإجراءات الطبية التي تتضمن الحقن أو الإبر تحت الجلد. يمكن للأشخاص الذين يعانون من هذه الحالة المنهكة في بعض الأحيان أن يعانون من أعراض مثل ارتفاع ضغط الدم، ومعدل ضربات القلب السريع أو خفقان القلب وحتى الإغماء أو فقدان الهدف من الدراسة هو علاج الأطفال الذين يعانون من رهاب الإبر أو الحقن.

الأهداف

لعلاج رهاب الحقن لدى عينة من أطفال مدينتي جنين وطولكرم، وقياس رهاب الحقن بين الأطفال المحولين إلى عيادات الأطفال الخارجية.

المواد والأساليب

دراسة مقطعية. سيتم اختيار مستشفيين في مدينتي جنين وطولكرم. سيتم عرض العملاء في عيادات الأطفال في المستشفيين الحكوميين. يتكون مجتمع الدراسة من الأطفال الذين تتراوح أعمارهم بين (8–12 سنة) المحولين إلى عيادات الأطفال. سيتم اختيار حوالي 50 طفلاً من المستشفيين. كما سيتم حقن 50 طفلاً آخر دون استخدام الأساليب النفسية؛ ستتم مقارنة المجموعتين بمستوى القلق بينهم بعد إجراء الحقن.

النتائج

وأظهرت النتائج أن مستوى رهاب الحقن بعد العلاج النفسي باستخدام ألعاب الفيديو والتشتيت البصري في المجموعة التجريبية كان متوسطًا، حيث بلغ متوسط الاستجابة للدرجة الكلية (3.36). كما أن مستوى الخوف من الحقن ومناطق الخوف الدموي كان متوسطًا، حيث كانت متوسطات الاستجابة للدرجة الكلية (3.35 ، 3.36) على التوالي.

أما بالنسبة للمجموعة الضابطة فقد بينت النتائج أن مستوى رهاب الحقن دون استخدام ألعاب الفيديو والتشتيت البصري في المجموعة الضابطة كان مرتفعا، حيث بلغ متوسط الاستجابة للدرجة الكلية (3.82).

بالإضافة إلى ذلك، كان مستوى الخوف من الحقن وخوف الدم مرتفعًا، حيث كانت متوسطات الاستجابة للدرجة الكلية (3.84 ، 3.80) على التوالي.

شارت النتائج إلى وجود فروق ذات دلالة إحصائية عند مستوى (p 0.05) في الدرجة الكلية لرهاب الحقن ومجالاته بين المجموعتين التجريبية والضابطة لصالح المجموعة التجريبية (أدنى المتوسطات). أشارت النتائج إلى وجود فروق ذات دلالة إحصائية عند مستوى (p 0.05) في الدرجة الكلية لرهاب الحقن بين الأطفال بين المجموعتين التجريبية والضابطة لصالح المجموعة التجريبية.الخوف من الإبر ورهاب الحقن يمثلان تحديًا وشائعًا بين الأطفال من الجنسين والأعمار المختلفة. يبدو أن العلاج النفسي لرهاب الحقن أكثر فعالية باستخدام ألعاب الفيديو والمشتتات مقارنة بالعلاج التقليدي. كشفت النتائج الرئيسية التي توصلنا إليها أن استخدام ألعاب الفيديو والمشتتات البصرية تعزز التأثيرات التي تقلل من رهاب الحقن وخوف الدم.

الكلمات المفتاحية: الإبر، رهاب الحقن، ألعاب الفيديو، الإلهاء البصري.