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Psych-Aetiology Graph (PAG)

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Abstract
This paper will introduce the 'Psych-Aetiology Graph', PAG for short. The concept of PAG is devised by the author as a way of conceptualising/formalising/summarising the client's condition. The term 'Psych-Aetiology' is used to encompass all the Bio-Psycho-Social factors contributing to the client's presenting condition. Also, the graph has no arithmetic value and is not based on any particular measurements or calculations. The target of the PAG is the client. Its main aim (amongst many) is to educate and give the client an understanding of factors resulting or contributing to their state. It is subjective, whereby the client and the therapist must cooperate in its formation.

Introduction

In order to formalise/conceptualise/summarise a client's condition, it is necessary to understand the aetiology and factors that operate in it. The main aim of this paper is to come up with a simple, client-centered and collaborative approach to make it easy for the client as well as the therapist/psychiatrist/psychologist to conceptualise and understand how different Bio-Psycho-Social factors resulted in the client's condition.

The paper consists of several sections. Firstly, a brief overview of the well-known aetiological models of mental disorders will be highlighted to demonstrate the complexity of the issue and the deficiencies in the models. Secondly, an overview of the so-called Bio-Psycho-Social approach along with the precipitating, perpetuating and predisposing factors to the conceptualisation of mental illness will be explained. This should hopefully serve to clarify the multiple factors causing and/or contributing to the client condition. In the third section, the theoretical concept of 'Psych-Aetiology Graph' (PAG) will be explained in further detail, highlighting its potential as

a simple, client-centered and inclusive tool for conceptualisation. There will also be two case studies discussed in this section, each demonstrating the use of the (PAG). Finally, the potential of the PAG, as well as its limitation will be mentioned. The paper then will end with a summary and a conclusion.

Aetiological Models of Mental Disorders

In this section, a review of the main aetiological models in psychological disorders will be highlighted to give the reader an overview of the different schools of thought that attempt to explain the causes of mental disorders. It must be emphasised that no one model is 'sufficient' to explain the aetiology of mental disorders, and each model suffers from its own lack of a comprehensive explanation.

1. The neuroscience model

The technical advances in brain science have led to what is often called the neuroscience approach. Kandel (1998) outlined the key assumptions underlying this approach to aetiology:

- All mental processes derive from operations of the brain. Thus all behavioural disorders are ultimately disturbance of brain function.
- Genes, through their product, have important effect on brain function and therefore exert a significant control over behaviour.
- Social and behavioural effects exert their effects on the brain in part through changes in gene expression.

The neuroscience approach seeks to comprehend behaviour by relating them to changes in brain function. The problem with this model is that it is reductionist seeking to understand causation by tracing back to simpler and simpler early stage. It also minimises the psycho-social and cultural influence.

2. The medical model

This model has proved useful in medicine. A disease entity is identified in terms of a consistent pattern of symptoms, a characteristic clinical course, and specific biochemical and pathological findings. This narrow kind of medical model has been useful in psychology, though not for all conditions. It is clearly relevant to syndromes with well-defined organic aetiology, for example Dementia and to a lesser extent Schizophrenia (here social and cultural factors also play a role).

Difficulties with the medical model arise, particularly with disorders characterised by abnormalities of conduct and social behaviour (for instance, Antisocial Personality Disorder). Like the neuroscience model, it is reductionist in its approach, paying little attention to human uniqueness and individual experience. Perhaps that is not surprising, as its approach is based on the medical model which pays more attention to pathology rather than behaviour.

3. The behavioural model

This model has its roots in the early work of Watson (1920) and Skinner (1953). As mentioned above, certain disorders are defined in terms of abnormal behaviour, such as deliberate self-harm, and do not fit into the medical model. In this model, the disorders are explained through factors that determine normal behaviour: drives, reinforcement, social and cultural influence.

Although the behavioural model does not exclude genetic, physiological, or biochemical factors, it does not place much emphasis on their role. This makes it difficult to explain disorders with high genetic and biological load, examples of which are Autism and Severe Schizophrenia that are categorised as genetic disorders by some scientists (Murray *et al* 1987, Jones *et al* 1991).

4. The developmental model

This model places more emphasis on past events in the form of a sequence of experiences leading to the present disorder. This approach has been called the 'life story' approach to aetiology. One example of it is Freud's psychoanalysis. The shortcomings of this model are the fact that it is grounded on theoretical assumptions and therefore lacks scientific evidence; and also that it arose from clinical experience and not from work in basic science. Moreover, the majority of the work is subjective and based on few case studies.

From the above brief review of the four models, it is clear that they all contain valid findings which help in understanding the aetiology of mental illness. However, if taken separately, none of the models adequately explain the aetiology of mental illness. In the author's point of view, it is extremely confusing to attempt to explain the aetiological and the contributing factors to the clients or their family, as each model is not sufficient by itself in explaining the complex factors operating in the presentation of the client condition.

In the next section, the Bio-Psycho-Social model for conceptualisation and the application of the so-called the three P's (predisposing, precipitating and perpetuating factors) will be discussed as an inclusive alternative to the aforesaid models for aetiological formulation.

The Bio-Psycho-Social Model to Formulation

To overcome the deficiencies of the abovementioned models in 1977, American Psychiatrist George Engel introduced a major theory in medicine, the Bio-Psycho-Social model (abbreviated "BPS"). This model or approach postulates that biological, psychological (which entails thought, emotions, and behaviour) and social factors all play a significant role in human functioning in the context of illness. Indeed, health is best understood as a combination of biological, psychological, and social factors rather than in purely biological terms. This is in contrast to the traditional, reductionist models mentioned above.

This model has been used in the formulation of client conditions as it is holistic and takes into account all the factors which may play a part in their disorders. A further elaboration which gathers more information in the three domains (i.e. the Bio-Psycho-Social) is the application of the so-called three P's.

A single mental disorder usually results from several causes. A useful approach used in the assessment divides the causes into predisposing, precipitating and perpetuating, which in turn could be biological, psychological and social (as will be explained in the next section).

1. Predisposing factors:
These are factors, many of them operating from early life, that determine a person's vulnerability to causes acting close to the time of the illness. They include genetic factors and the environment *in utero*, as well as physical, psychological and social factors in infancy and early childhood. These factors predispose to develop a disorder (such as Schizophrenia) and shape human personality. When the aetiology of an individual case is formulated, the predisposing factors are essential to incorporate.

2. Precipitating factors:
These are events that occur shortly before the onset of a disorder and appear to have induced it. They may be physical, psychological or social. Whether they produce a disorder at all, and what kind of disorder at all, depends partly on

constitutional factors in the patient. Again these factors are important to include in the formulation of the client's condition.

3. Perpetuating (maintaining) factors:
These factors prolong the course of the disorder after it has been provoked. When formulating and managing the individual, it is important to pay attention to these factors. Again, these factors could be physical, psychological or social.

From the above discussion of the model, it is evident that a large amount of information could be gathered. In addition, the factors have different magnitude depending on the individual and so making each client unique. The complexity of the information is a possible predicament in using this model to conceptualise client condition, as is finding a simple way to communicate the client (and other colleges) the many factors and their impact on the patient's state. This is where the Psych-Aetiology Graph (PAG) could have the potential to simplify the formulation (which is its main objective). It also has several other potential uses. In the next section is a detailed explanation of the PAG utilisation in clinical settings as well as its possible potentials will be mentioned in the next part of the paper.

The Psych-Aetiology Graph (PAG)

The aim of this paper is to introduce the concept of the 'Psych-Aetiology Graph' (PAG). It is what the author believes to be a new, useful way (tool) in client/patient/person assessment and management (as will be demonstrated later). The terms Psych-Aetiology here is used literally and the concepts is used to empower the client to understand the 'causation' of their presenting state (e.g. depression, anxiety, personality disorders).

Formulating or conceptualising a person's assessment and management in a single, easy-to-use way, is the aim of this paper. Theoretically, the author assumes that having the ability to present a client's assessment in a graphic representation may aid the therapist/health worker to understand and communicate all the relevant information to the client and to other health professionals.

The use of PAG has only been done by the author and does not have a standardised version. It is the author's belief that the PAG has many possible advantages; however, there has been no study (apart from case series, collected by the author- unpublished) to support the aforementioned claim, thus the PAG is considered to be a work in progress.

In the next sections, firstly, the PAG will be introduced with all the relevant terms along with a brief description of each term. Secondly, outline of important clarifications will be given. . Thirdly, two cases will be outlined to demonstrate the PAG use. Finally, a summary and conclusion will be highlighted.

The Components of the Psych-Aetiology Graph (terms and definition)

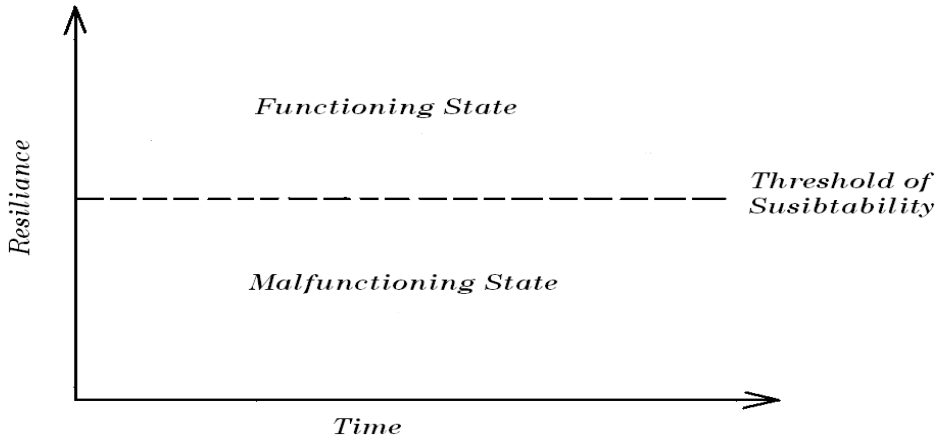

Figure 1. Basic Component of the PAG

The Threshold Line: This represents the line which separates 'the functioning state' and the 'malfunctioning state' or the faulty function. Crossing the line will result in transition from one state to another. 'Functioning' here takes a wider meaning and could be labeled as a state of wellbeing. 'Malfunction' also has a wider meaning which includes emotional, behavioural and cognitive states. A good example is Depression (see below *fig.2*). The position of the line is determined by bio-psycho-social factors, especially some of the hereditary and environmental factors (Nature & Nurture).

Resilience Axis: The vertical axis on the PAG. Resilience refers to any positive bio-psycho-social resources (e.g. physical fitness + good personality traits + good social network). The definitions according to the Oxford dictionary of the word resilience are:

A. The ability to recover quickly from illness, change, or misfortune; buoyancy.
B. The property of a material that enables it to resume its original shape or position after being bent, stretched, or compressed; elasticity.

The Time Axis: The horizontal line represents time. The time scale will depend on the purpose of the PAG. It could be expressed in days or weeks, focusing on a short period of time; or in months or years, focusing on the bigger picture.

A Hit: Again, this includes a negative bio-psycho-social event (e.g. hypothyroidism in Depression, negative thinking trait, divorce etc.). 'A hit' brings the person closer to the malfunctioning state; or if they already are in the malfunctioning state, it causes them to sink deeper into it. There are 'minor hits' (mh) and 'major hits' (MH). A 'mh' does not cross the threshold whereas a 'MH' crosses the threshold line into a malfunctioning state.

A Lift: This is the opposite of a 'hit' and operates in the other direction. It consists of 'minor lifts' (ml) and 'major lifts' (ML).

Important Consideration Regarding the PAG

1. The graph is subjectively oriented. The distance of each line, the length of each hit or lift will be unique for each individual. For example, divorce for one client may cause a large drop, whereas for another, it may cause smaller drop or even a lift.

2. The use of a graph should not be deterrent or off putting for a client, as its basic use does not involve any arithmetic skills. Saying that, it is possible that a format using numbers could be made. However, this will require extensive research with an emphasis on reliability and validity. In its current format, the objective of the PAG is entirely phenomological and subjectively constructed.

3. It is often difficult for a client (and their family) to comprehend how the bio-psycho-social factors combine and contribute to the client state (e.g. hypothyroidism precipitating depression, antibiotic perpetuating anxiety or positive family history predisposing to schizophrenia). The PAG sums up all the factors collected from the client history and/ or a collateral history, to demonstrate in one 'snap shoot' how the case evolved. Basically, the PAG has the potential to educate and to illuminate all the bio-psycho-social factors interaction in a simple to understand way.

4. Therapeutically, once the PAG is constructed, the 'challenge' is to minimise or remove the hits and maximize or introduce new lifts (e.g. removal of a stressor, starting an antidepressant). Perhaps an analogy would be thinking of the PAG

as a map, where the 'bigger picture' is illustrated. The target then is the zooming at specific area within the map and attempting to look at it in depth.

5. The PAG is a collaborative effort. Both the patient and the therapist should have an input in its construction.

In the next section two cases will be highlighted. They will serve as good examples for the use of PAG in summarizing client's history and formulation.

Examples of the PAG in Clinical Use

1. Depression

Client *A* is a 43 years old lady, divorced recently. The client used to work as a receptionist, but currently unemployed. She presented with crying spills, lack of energy and loss of pleasure, all in the past two month. The client gave a history of typical symptoms of major depression. Her symptomology started after her divorce (1-mh). She was then barely able to cope until she was fired from her work (2-mh) due to poor attendance and inability to carry on with her duties. Subsequently, the client struggled financially and was under severe pressure due to that. The financial situation (3-MH) was the 'last strew' leading to a 'breakdown" in the clients condition and manifesting with severe depression. She tried to cope by drinking alcohol, especially at night because of insomnia. She also started using diazepam (4-mh) which she was able to obtain from a friend. After this the client presented to the clinic.

The patient has a strong family history of depression as both her sister and two aunts suffered from depression. Physically she is well, apart from the biological symptoms of depression, in her case mainly a weight loss. Her childhood was unhappy as she lost her father when she was 13yrs old. Academically she did well, but did not enjoy school mainly due to her introverted nature. Premorbid personality, the client is a worrier, moody and has difficulty coping with stress.

Upon attending the clinic, the psychiatrist started the client on antidepressant. After 4 weeks the patient was better (5-ML). The psychiatrist and the client then agreed for her to see a therapist to help the client to come to term with the divorce (6-ml).

The above is a brief history with the positive findings. A full history would have been much longer with more details. This is the author's reason for coming up with the PAG. The figure below demonstrates the use of the PAG with the above client.

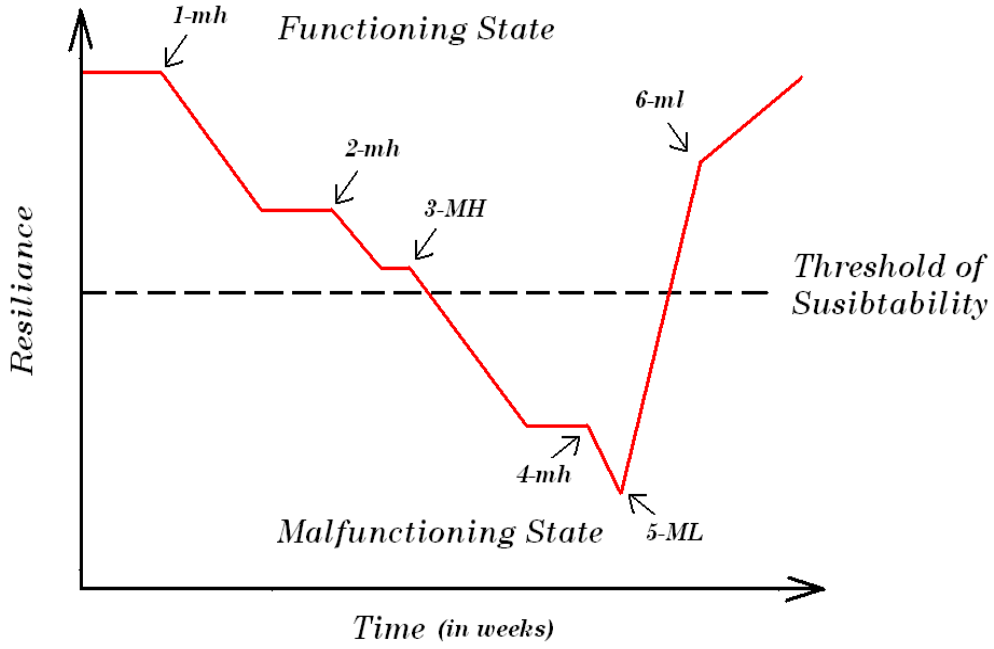

Figure 2. PAG for Depression

The figure above demonstrates the use of the PAG in Depression. It has to be noted that each patient will have their unique PAG that depends on the bio-psycho-social factors influencing the client's life. An example is the above client where:

1-mh = Divorce.
2-mh = Unemployment.
3-MH = Financial struggle (patient now in malfunctioning state, in this case it is depression)
4-mh = Substance misuse.
5-ML = treatment with antidepressants.
6-ml = Cognitive therapy with focus on coming to terms with the divorce.

2. Borderline Personality Disorder (DSM-IV-TR 2005)

Here a case of Borderline Personality Disorder will be given. We will draw the graph directly to demonstrate the usefulness of the PAG in complex cases.

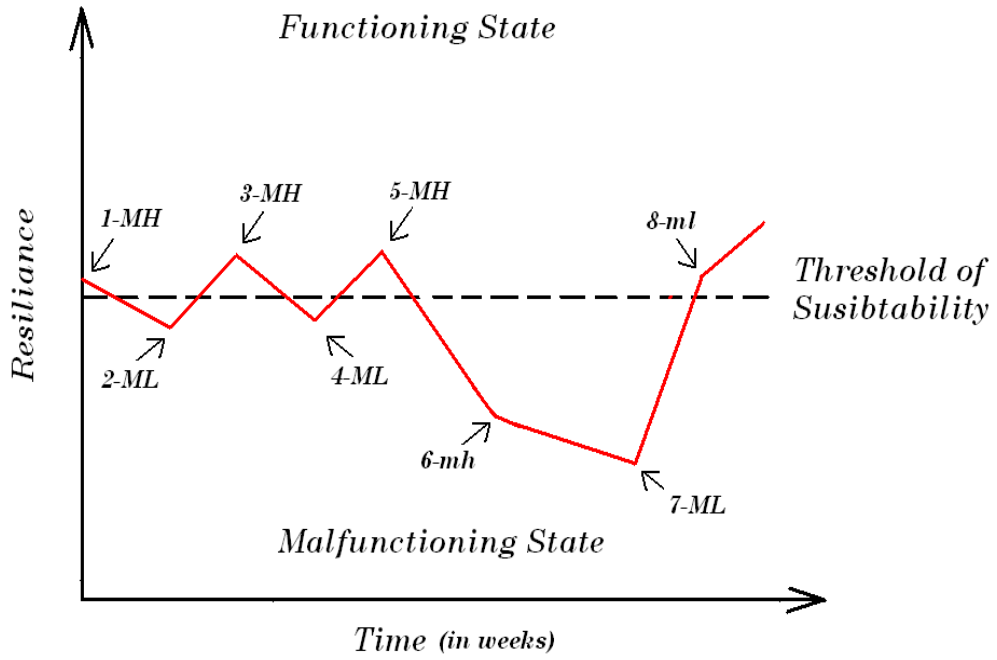

Figure 3. PAG for Borderline Personality Disorder

Here, we expect the client's baseline to be close to the threshold regarding their mood. Typically, the PAG shows a zigzag line which suggests a fluctuating mood state due to poor coping skills. For example, in the above figure (*fig.3*):

1-MH = Break up in a relationship.
2-ML = Natural return to 'normality' due to stress free period.
3-MH = Another relationship and another breakup.
4-ML = Again natural return due to stress free (relationship free) period.
5-MH = Yet another relationship break up, this time the client goes into significant depression as shown by how far the line is in the malfunctioning state of the PAG.
6-mh = Substance misuse leading to a suicide attempt.
7-ML =Patient on psychotropic medication.
8- ml = patient undergoing psychotherapy (e.g. Cognitive Analytical Therapy- Ryle *et al* 2002)

As can be seen from these two examples, each condition and each patient will have different PAG with different 'hits' and 'lifts'. The number plotted on the PAG will depend on a good history and formulation. Also, a client's feedback may help in the construction of an accurate PAG.

The PAG is not quantitively-centered and there are no measurable units. The number of 'hits' and 'lifts', as well as the position of the client's mental state in the malfunctioning area, is subjective. This again emphasises the importance of involving the client in drawing up the PAG.

One could argue that having the PAG with the additional information (i.e. details of the 'hits' and 'lifts') could have several advantages. In the next section, we will briefly discuss the possible advantages as well as the limitations of the PAG.

Possible Advantages and Potentials of the PAG

- Simple, but informative: The simplicity of the graph and its 'common sense' approach may be an incentive to both the mental health worker and the client.

- A tool in psychotherapy: During a therapy session, joint conceptualisation allows the client to contribute, thus building the 'therapeutic alliance'. Moreover, it develops an understanding of how different issues have shaped the client's presentation.

- Saving time and energy: Having a well-made PAG could save time as it summarises and identifies the factors responsible for client presentation and management.

- Communication: As well as communicating with the client, having a simple form of case summary could, theoretically, help in the referral and supervision processes.

- Client centered: The PAG, if used with the client's contribution, grants them a sense of empowerment and may subsequently help in certain situations (e.g. assertiveness).

- Uses in different settings: The PAG is a potential tool with possible application in psychotherapy, counseling, assessment and management.

- Standardisation: If researched further, the PAG could be refined and standardised.

Limitations of the PAG

- Being a new concept, it has yet to be researched. As it is, it lacks an evidence base to support the possible advantages that have been mentioned.
- In the user's point of view, depending solely on the PAG may be too simplistic.
- It may perhaps be viewed negatively as reductionist approach by the health worker and/or the client.
- The terms used on the PAG could be confusing to those who view it.

Summary & Conclusion

The paper introduced the 'Psych-Aetiology Graph'. The PAG is a graphic representation of a person's formulation using Bio-Psycho-Social information. It is simple, practical, and easy to formulate and read; therefore it can potentially be useful in psychotherapy, history presentation, communication, and management.

Management of a client could be improved by producing a good, inclusive (bio-psycho-social) PAG. The graph is easy for clients to understand and contribute to, therefore empowering them and as a result, functioning as a therapeutic tool.

The simplicity of producing the graph also has a pragmatic component, as it is easy to grasp and could be used by any person once they know how to conceptualise it. As this is a new tool, no research has been conducted using the PAG. The PAG is a new concept which has the potential to be applicable in therapeutic settings. However, like any effective tool, it needs to be tried, refined and studied before being judged on usefulness and applicability.

Finally, the author will be interested in any feedback regarding the PAG and is open to any constructive criticism and suggestions.

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