

Review Article

The Body, Environment, Mind and Spirit (BEMS) Pathway of Addiction Causality and Curative Interventions

Akinbote JA^{*}, Olujimi A² and Mejta CL¹

¹Addiction Studies and Behavioral Health, GSU, Illinois, USA

²ICAN Community Services, Illinois, USA

Abstract

Background: It remains a great puzzle as various etiological approaches to addiction problems or disorders have continued to generate interesting controversies amidst valuable inputs to the management of addictive disorder cases over the years. More perplexing is the fact that, while some theories or models are rigidly in adherence to or are outgrowth ideas of the traditional medical and moral models, some newer concepts emphasized the combinations or interrelationships in the context of these rudimentary models without yet, a universally acceptable causality. A foremost addiction counselor, Todd Lewis, in his book Substance Abuse and Addiction Treatment (2014), emphasized this universal acceptability gap in causation despite the rich array of etiological theories in the addiction field by quoting Doweiko; "Research has supported both genetic predisposition and learning components in the onset of addiction, yet a grand, unifying theory has yet to emerge". This is a catapulting challenge that has ignited the need to develop a near perfectly acceptable and holistic pathway or cycle rather than proffering another static model that cannot clearly explain the complex system of addiction causation as well as providing result oriented interventional strategies for treatments.

Objective: This current study aims to use the systematic Ground Theory (GT) research approach to develop an all-inclusive and functional pathway for addiction causality and treatment interventions without negating an insightful provision for cultural, ethnical, racial and gender variations using the elementary model of Body-Environment-Mind-Spirit (BEMS) model of disease causation and treatment.

Keywords: Addiction; Disease; Models; Pathway

***Corresponding author:** Akinbote JA, Addiction Studies and Behavioral Health, GSU, Illinois, USA, E-mail: jakinbote@student.govst.edu

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The Body-Environment-Mind-Spirit concept: Coming Back to the Basics

There are 4 components that form the basis of this novel pathway, albeit, 3 technically. The body, environment, mind and spirit, though the "spirit-mind" will be better seen as a complex entity rather than their separation into mind and spirit in a more philosophical sense. The assumption here, is to view the mind as been cohesively bound to a 'forceful' extra-physical, non-three-dimensional material that is usually called "spirit". This term "spirit" will undoubtedly provoke certain controversies or contempt due to the understandable religious undertones associated with it [1]. For lucidity sake, it will be convenient to adapt the "spirit-mind" concept due to their connection but at the same time, we will appeal to scholars' understanding for their emphasized separate roles in the course of building up this revolutionary pathway.

The dichotomy of mind-body dualism and mind-body materialism (monism) will be tilted in favor of the more empirical view, which propose that, the conscious human minds are the product of physical brain activity [2-4], though it "appears" not strictly limited to this as there are other important entities involved in the neuropsychological concept [5]. At a multi-disciplinary meeting of experts from the fields of neuroscience, physics, sociology, and anthropology aimed at coming to an understanding of the mind and resolving its long age controversies across fields, Siegel [5] embraced this seemingly acceptable definition; "the mind is the emergent self-organizing process, both embodied and relational, that regulates energy and information flow within and among us". This is the outcome of a protracted debate held over 2 decades ago. It is vital to quickly emphasize that, this does not negate the findings of neuroscientific researches, that posits that mind is the brain in action but rather, it only shed more light on the unique pivotal role of the mind.

One important message from this multidisciplinary description of the mind is the connectivity with the body and environment as seen in the last 5 words of the definition, "...flow within (denoting body) and among us (denoting environment)". We can therefore, appreciate the role of the mind on the body, which describes the whole physical mass and structure of human centrally coordinated by the brain and likewise on the environment, which includes all material and non-material things or conditions around us. The complex "self-organizing process" and the "energy regulatory or informational activities" aspect of the definition, can now be best explained by using newer brain imaging technique called Functional Magnetic Resonance Imaging (fMRI), an instrument that measures brain activities and translates it into the vivid iconic images as a device for unravelling the complexity of the mind. Because of the pivotal and central role, the mind (including the spirit) will play in this pathway, it will worth given further description or elucidation.

The working process of the mind can be assessed by introspection, behavior and physiological monitoring [1]. Introspection is simply the act of focusing on your own thought functions processes and progression. This is the conscious effort to monitor how you make use

of your mental processes to solve tasks or appreciate natural event. Interestingly, you and those around you can better appreciate your mind by observing your behavior if no attempt is made to mask your mood, feeling or thinking. The only objective way of assessing the working processes of the mind is through physiological monitoring. This simply entails using certain physiological processes and devices like; dreams (Encephalo-Electrography), falsehood (lie detectors) and cognitive activities (Functional Magnetic Resonance Imaging) can be monitored to give insight to the intricate activities of our mind. Advances in neuro-imaging can show how various bodily functions are regulated in different parts of the brain and as such provided more plausible evidence to the fact that brain activities explain the various features of our minds [6,7].

If we describe the mind as being complex, then the spirit is “exasperatingly complicated” because it means different things to different people at different circumstances. An attempt to go into various exhaustive literatures will only do more harm than good. For the sake of this pathway, we described the spirit as ‘an outflow of the mind that radiates energetic will power, increase extra-sensory perception, enhance consciousness and ensures extra-physical hijack of our mental processes within a willing individual’. Every individual has access to tap from this innate gift of nature which is in a spectrum that can be exemplified by looking at a subjective experience of heightened motivation after listening to great motivational speakers through a dissociative trance like state when in some religious setting and finally to an “out of the body experience” during accident or some metaphysical practices. It is therefore important to bear in mind that, the “spirit mind” concept may be used for convenience sometimes in order not to miss the salient and pivotal role of “spirit” on the mind in this pathway of addiction causality and treatment.

Building up from the primordial, advanced and novel models of addiction: The road to a revolutionary pathway

Introspectively, the primordial and current models of addiction can be said to have their pluses and flaws. The unitary models should be appreciated for their simplicity while the amalgamated and interconnected ones should be better embraced for their expansive view of the problem. The primordial models include the moral (most popular), disease (original 12-step group’s view), temperance (ignorance), educational and conditioning. The medical model (still conveniently called the disease model) is a modification of the original disease model but with the evidenced based approach [8], it can conveniently lead the group of the current or advanced models. Others are the psychological and sociocultural which has some coloration of the moral model and social learning theory, as such can be described as advanced. These novel groups are more balanced and accommodating in view. This includes the new brain disease theory (biopsychosocial), Public Health and multifactorial theories. The final common pathway model appears similar to the current study; however, it lacks an expanded detail comparatively. The concepts of some of the primordial and advanced theories still compete with the novel ones in the practical discussion of addiction till date. These models or theories are grounded in sociological, psychological, biological and even philosophical ideologies as such they remain the building block of this pathway in view.

The BEMS pathway is rather more administrative in approach despite imbibing the principles of the aforementioned theories as it views the addicted individual as an ‘administrator’ of the body, environment, mind and spirit in the context of causation and cure of

addictive process and state. An important point to note is that, the best administrator must have an intuitive managerial prowess coupled with the ability to tap human and non-human resources around him/her to achieve optimal result. Addiction is one the most “complex administrative puzzle” to solve. The seasoned administrator, Simon Herbert (1957) stated that, “the capacity of the human mind for formulating and solving complex problems is very small in comparison with the size of the problems whose solution is required for objective rational behavior in the real world or even for a reasonable approximation to such objective rationality”. This is where the spirit aspect of the spirit-mind comes into play. It is vital to that, additional assistance known as self-help may also be needed in most cases. The rational decision to prevent and change an addictive state will need organization and institutionalization in a strict administrative sense.

To further describe this organizationally driven pathway, let us view the human as an industrial machine. The brain act has the electrical control box transmitting signals to all part of the machine through wires or electric cables (analogous to nerves), the mind is the inner (mostly unseen) processes of production (mixing, blending, grinding etc.), the body is the actual visible machinery parts and activities like packaging the final product. Expectedly, the spirit can be likened to the extra-machinery assistance given by the trained operators to ensure a near perfect production while the environment includes all materials needed by the machine (like fuel, grease, water etc.) and other non-essential components of the surrounding. The summary of what we have discussed so far is that, this pathway with allow the definitive assignment of the various etiological models or theories to the different components of the BEMS as a way of appreciating an expanded but holistic view of the cause of addiction. Similarly, the different treatment approach can also be assigned to the appropriate component or path in order to have a broad coverage of various therapeutic options.

Methodology

Research instruments

The study was approached using the Straussian Ground Theory research technique by analytically setting out measures that will be inductively used to derive an all-encompassing pathway or cycle for the etiology and treatment of addiction. This was carried out using 6 standard standalone search engines (to avoid repetitions).

Procedure

Two search engines, each from medical, psychological and sociological fields were selected using balloting from a list of 6 search engines in each field. The search engines picked thereafter are; Medscape, PubMed (Medical), PsycINFO, Behavioral Brain Science Archives (Psychology), Social Science Research Network and The Socioweb (sociology). The search engines were used to collate data and corroborate information by using keywords to search for various models of addiction as well as related variables such as gender, culture, ethnicity and effective treatment modalities. Search words for etiology of addiction and diversity variables in scholarly journals were noted and coded. Information from video, book, flashcards, Wikipedia were avoided. The Information gathered and analyzed data were used to enhance understanding and direction in formulating the flow of the causative pathway and curative algorithm. This research method, allows for the cumulative input of the researchers, based on their prior knowledge, experience and intuitive skills to improve sensitivity of the tools during the research.

| Search Engines | | Models and Theories | | | | | Diversity Factors | | |
|----------------------|-------------------------|---------------------|----------|---------------|----------|----------------|-------------------|---------|-------------------|
| | | Medical | Moral | Psychological | NBDT/BPS | Socio-Cultural | Gender | Age | Ethnicity/Culture |
| Medical | Medscape (Number and %) | 56 (28%) | 32 (16%) | 25 (12%) | 50 (25%) | 26 (13%) | 3 (2%) | 2 (1%) | 3 (2%) |
| | Pubmed (Number and %) | 18 (29%) | 12 (19%) | 9 (14%) | 5 (8%) | 7 (11%) | 5 (8%) | 2 (3%) | 4 (6%) |
| Psychology | Psycinfo (number and %) | 1 (20%) | | 1 (20%) | 2 (40%) | | | | 1 (20%) |
| | BBSA (Number and %) | | | 4 (36%) | | | 1 (9%) | 6 (55%) | |
| Sociology | SSRN (Number and %) | | 2 (100%) | | | | | | |
| | Socioweb (Number and %) | | | | | | | | |
| Total (Number and %) | | 75 (28%) | 46 (17%) | 32 (12%) | 57 (21%) | 33 (12%) | 9 (3%) | 10 (4%) | 8 (3%) |

Table 1: The proportion of addiction models/theories and diversity factor from search engines.

Data analysis

Manual analytic technique was preferably used for selective coding of the collected data into a memo (coded notes, e.g. Medical model was coded 1 and Moral model 2) with continuous step-wise comparison to determine categorization of variables and the direction of the major elements of the pathway

Ethical considerations

The proposal was presented at the 2018 Research day of the Governor State University, Illinois for approval. There will not be any direct or indirect contact with human subjects or their information during this seemingly first phase of the study, as such there was no submission made to the Institutional Review Board.

Results (Table 1)

Disease Model leads, others follow: A reflection of treatment approach

This table shows the outcomes of the search engines when used to assess researchers' targeted models and diversity variables across the medical, psychological and sociological fields. The medical field search engines show remarkable interest in addiction etiology generally with the disease model recording overall highest attention (28%) followed by the biopsychosocial (21%) and moral model (17%). The attention on diversity was slightly high on age -centered studies. This relatively higher attention in the medical model seems to suggest the thinking and treatment approach that most patients or clients probably go through solely or in combination with other modalities of treatment in the field of addiction management (Figure 1).

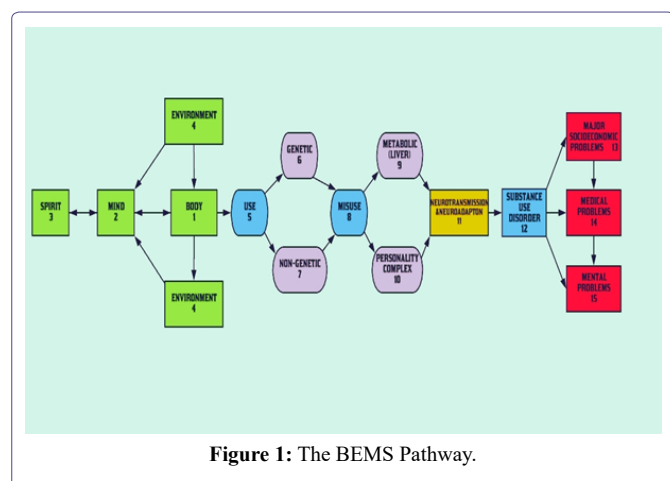


Figure 1: The BEMS Pathway.

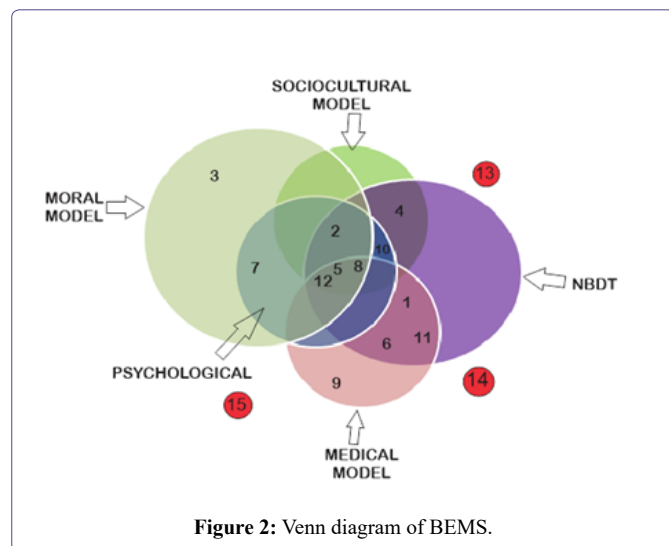
Etiology of Addiction: The BEM Pathway Approach

The diagram (Figure 1) above was built with an intuitive understanding, experience and guide by findings from researches from the medical, psychological and sociological fields. The body can be seen in a bidirectional link with the mind. The mind serves an administrative purpose to reflect the brain's activity on the body in the area of choice, control and coordination of addictive processes and state. The first step in substance use disorder spectrum is use. This can come up because of therapeutic need, experimentation, imitation or unintentional (accidental) action of an individual. This occurs in the background of an intact BEMS equilibrium since it usually without any consequence. When used in the background of negative consequences, misuse comes while the continued use in a background of negative consequences leads to abuse. The ultimate point is established, when compulsive use with associated difficulty in control, tolerance and withdrawal set in to give dependence (addiction). Addiction and the attached grievous consequences therefore, becomes the outcome of disequilibrium to and from the body in the pathway. According to the DSM V, both misuse and dependence constitute the Substance Use Disorders (SUDs). Misuse and the other SUDs can be triggered by salient or inactive genes after use while those without genetic predisposition can also misuse and even proceed to the SUDs as a result of psychological, environmental, cultural and spiritual factors. This pathway encompasses all the common models for addiction in addition to certain possible interactions as they move along the spectrum from use to addiction.

From figure 1, the different models can be explained. The medical model (1, 5, 6, 8, 9, 11, 12), explains that alcoholism and other forms of addiction is a disease. This is mainly genetic according to Jellinek. The use of drugs triggers or are triggered by genetic components in the liver enzymes, fast metabolizer is more likely to have reduced effect compared to the slow metabolizers, this set the road for misusing the drugs and subsequently there is neuroadaptation and rein enforcement in the brain reward center leading to substance use disorders especially dependence. A contemporarily antagonistic model to the medical model is the moral model (2, 3, 5, 7, 8 and 12). This model posits that, the cardinal problem of alcoholism and addiction is the wrong choice made by the individual because of weakened moral values and spiritual status. The mind is a sole mediator between the body and spirit, though the spirit modulates its actions and the body gives the signals. It serves as the "ego", the body is the "id" while the spirit assumes the status of "super ego" function. An ill-equipped moral uprightness is consequence of weak will power (an ingredient of the spirit) to resist what the public and the legal system perceive as awful and unacceptable. The spirit can extinguish any moral justification for

taking drugs in the first place or ensure immediate reversal of action, as such we see the dramatic change in addicts or alcoholics that says, and they conquered the irrepressible urge, when they found God or join the 12-step groups.

Another school of thought believes that addiction is secondarily an aftermath of maladaptive coping to mental or medical illness as the sufferer prefers to mitigate the sufferings using self-medication. This proposed psychological model (2, 5, 7, 8, 10, 12), also entertains the controversial “addicted personality” because, just as nature abhors vacuum, innate addictive tendencies will always perpetuate in other ways to resolve the mental conflicts. One common angle to this is the increased intake of coffee (caffeine) by most members of Alcoholics Anonymous especially during meetings (a call for further research if none). Environment can play significant role in addiction as strongly supported by the socio-cultural theory (2, 4, 5, 8 and 12) through some conditional learning processes. The key components of the learning are the drug (central object), the set (expectations of the experience of taking the drug) and the setting (the normal environment or circumstances you take the drug). More encompassing models are the Biopsychosocial models typified by the NBDT which means New Brain Disease Theory (1,2,4,5,6,8,10,11,12). This novel theory has it that, the genetic predisposition to neuroadaptive changes caused by drugs or addictive activations can also be modulated by psychological insults and environmental impacts but not necessarily an ‘all or none rule’. The common pathway theory (1-12), explains that that all theory all meets at a point but with no detailed interactive and aligning explanations. The meeting points (Figure 2) of the different theories or models can give a vivid insight to this.



Within and Outside the Meeting Points: Implications for Curative Intervention

From the Venn diagram (Figure 2) above, all the recruited theories show some forms overlap though, the two primary “antagonistic models” (moral and medical) still show some out-layers (3 and 9). These are the spirit (moral) and metabolic (medical). They serve very important role in the holistic treatment or curative intervention of addiction. The concept of spirit should be separated though not strictly from spirituality and religion [9]. They concluded that religion and spirituality accounts for a significant part of the way of life of US citizens as about 96% believe in a higher power while more than

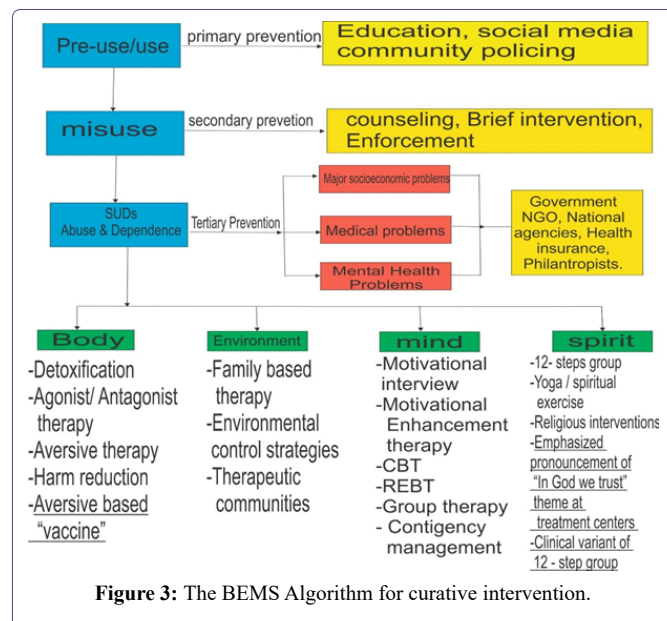
90% pray to a superior being. This clearly reflects in the “In God We Trust” motto adopted by the 1956 (H.J. Resolution 396) Congress of the country. It is possible that this loss of the spiritual ideal (trust in God) of the founding fathers has contributed immensely to the steady increase in substance use disorders and the slogan has not be optimally utilized in possible resolution of the menace. Another contributory role of this belief in the spiritual powers is the contribution of the 12 step groups like the Alcoholics Anonymous (founded in 1935 in US) which has been faced with conflicting interpretations globally. An extensive focused review of literatures for AA effectiveness shows that abstinence rate is twice as high among those who attend compared to the general population [10]. It becomes imperative to advocate that an elaborate spirit based treatment modality in the prevention and recovery of addiction problems while ensuring ethical or professional caution to avoid imposing one’s belief on clients [9]. Non-religious activities like yoga and other mindfulness exercises can also be included in recovery strategies.

The liver role in metabolism of drug through the actions of microsomal enzymes is affected by multiple factors which need further attention in advancing novel therapeutic target for addiction. Metabolism of drugs occurs at varying rate due to different genetic and bodily physiognomies of individuals as well other influential factors, such as: Age, enzymatic structure, and the rate of hepatic metabolite flow, nutrition and type of gut microbes. It is valuable to add that, current epidemiological findings have also estimated that primary genetic and Transgenerational epigenetic factors account for greater than half of the risk factors for alcoholism [11-13]. While more focus is now on the neurotransmission changes in the brain due to addiction, a revisit to the possible role of the liver metabolism may proffer vital intervention options for alcohol and other drugs addiction. Variations in individual enzymatic genes have been implicated in the risk for alcoholism. Though, different genes including social and environmental modulation are important here [14,15], targeting enzymes to cause undesirable effects as seen in disulfiram use in alcohol for other drugs like cocaine and opioid will help significantly. This can form an alternative basis for the proposed “vaccine” for addiction of another novel therapeutic target.

Implication for diversity in addiction

Every assumption concerning etiology and treatment needs to factor in the concept of diversity for it to have a universal acceptance. This is sturdily hinged on the ethical principle of justice as advocated by the International Ethical Guidelines for Biomedical Research Involving Human Subjects [16]. The BEMS pathway in line with this provides for differences in gender, color, sexual orientation (Body), ethnicity, cultural values (Environment), beliefs, religion and spirituality (Mind & Spirit). It therefore becomes significant to posit that, competency and comprehensiveness in the addiction field require that the therapists should be aware and sensitive to the diverse health beliefs, attitudes, therapeutic practices, socio-cultural and linguistic needs of different populations. The United States for instance is made up of a diverse multiethnic society with the minority rising above one-third of the population in recent times. Counselors and therapists are required to ensure competence in cultural diversity issues like race, ethnicity, nationality, religion, gender, sexual identity, socioeconomic status, physical ability, language, beliefs, behavior patterns, or customs among various groups within a community, organization, or nation. This can be efficiently and effectively done by categorizing them under the components of BEMS as indicated earlier for easy and clear understanding of the dynamics.

Historically, the sociocultural beliefs of Native Americans and the minority groups about alcohol and other drugs evolved as a result of earlier challenges they faced, business transactions, ceremonial rites and need to enhance productivity of workers. These have over time, shaped their view and behavior about substance use and abuse. The protective, medicinal and recreational values are still tightly held to in certain cultures in modern days. This has further supported that the treatment and recovery processes of addiction should be taken with more organized and validated approach. For objectivity sake, the Addiction Belief Inventory (ABI) was developed and assessed to measure personal beliefs about addiction to substances. It is a 40-item instrument developed that made use of two clinical samples in treatment: A group consisting of alcohol users (N = 134) and another group that include individuals with co-morbid diagnosis (N = 536). The 7 subscales used covers mainly factors in the medical, moral and psychological models which can conveniently regrouped into the BEMS. They are: Inability to control, chronic disease, genetic basis (Medical model/Body), reliance on experts (Environment), responsibility for actions, responsibility for recovery (Moral model/Mind-Spirit) and coping (Psychological) (Figure 3).



Conclusion and Recommendations

One exceptional beauty of the BEMS pathway is the unified way of bringing the causality models and curative modalities together without conflict. It appreciates the diverse approaches to the causes and therapies relating to addiction while advocating a holistic, realistic and functionalistic atmosphere for clinicians, coaches and counselors to achieve optimal result in dealing with this catastrophic behavioral problem. The use of the change model and relapse prevention strategies are well embraced as pivotal guide to utilize these basic or rudimentary concept of existence (BEMS) in providing education and solution to clients irrespective of their gender, culture, race and belief. While some novel approaches such as aversive based “vaccine” and

nationally driven spiritual concept of “In God We Trust” are near futuristic proposal for the pharmaceutical companies and US Congress respectively, the acceptance of the BEMS pathway and algorithm will unarguably address the problem of arriving at a unifying and accommodating theoretical ideologies of addiction in terms of causality and treatment. There will be some points of differences or views in the buildup process and suppositions, however, the structures are amenable to new ideas, constructive criticisms and corrective input. We hope that the Government and National Agencies can encourage further research towards achieving the anticipated near perfect outcome.

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