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The Effect of Living Underground for 15 Years on the Health of Kimmy Schmidt

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Abstract

This paper examines the main character, Kimmy Schmidt, of the popular TV series 'The Unbreakable Kimmy Schmidt' and the range of health problems she would likely have exhibited after living in an underground bunker for 15 years. Such problems include mental health, muscle atrophy, vitamin D deficiency and visual problems. The TV series alludes to some of these problems but does not successfully represent the true extent of what we would expect. Furthermore, after 15 years without adequate medical care Kimmy might also have other undiagnosed medical conditions.

Introduction

The popular Netflix original 'The Unbreakable Kimmy Schmidt' follows Kimmy Schmidt and her new life in New York City after being kept underground in a doomsday cult with three other women [1]. Imprisoned in eighth grade by local Reverend Richard Wayne Gary Wayne, she and the other captives are finally found and freed 15 years later in 2015.

Upon emerging from imprisonment, Kimmy exhibits no obvious deterioration in health; however, it is more than likely that living underground for such a long time would cause a range of problems including, but not limited to, vitamin D Deficiency, mental health problems, muscle atrophy and increased sensitivity to light.

Conditions in the Bunker

The bunker consists of three small rooms: a living space, an air filter room and one room occupied only by the Reverend, all connected by narrow tunnels. The captives spent much of their time in only the living space, which they used for all daily activities such as for sleep, meals and play [2].

There is no source of natural light in the bunker; flashbacks show only a few lamps mounted to the walls [2]. The diet during their time is unknown but we can assume it would not have been as varied as an average person's. Details of their personal

hygiene are also not known, such as brushing teeth and showering, but we could assume absence of these everyday health regimes might accelerate any ill health.

Muscle Atrophy

The series alludes to a surprising amount of physical activity possible in the bunker. In one episode, Kimmy is shown to be supporting the weight of the dining table while the others eat by using her legs. In flashbacks in Episodes 11 [3] and 12 [2], Kimmy and the other women are seen cranking a mysterious handle and it is suggested that this task is physically exerting. It is later revealed that movement of this handle generated electricity for the kidnapper's room and we can therefore infer that this task is one which was probably carried out everyday.

Despite this, some degree of muscle atrophy would have likely occurred; this is a condition in which lack of proper physical activity causes muscle mass to decrease. In such a small space, even if some physical activity was possible, it would have been limited and the muscle groups being used would have been limited leading to atrophy of potentially some but not all muscles.

Mental Health

Though not directly mentioned, one can infer that Kimmy experiences some degree of post-traumatic stress disorder, PTSD, following her imprisonment.

The common symptoms of PTSD include vivid flashbacks, nightmares, intrusive thoughts or images and intense distress and/or physical sensations when reminded of the trauma [4]. Throughout the first season, Kimmy exhibits many of these symptoms. She experiences very vivid and extended flashbacks and is able to perfectly recall exact conversations. She even has a nightmare in which she finds herself back in the bunker and wakes to find herself strangling her roommate [5]. Kimmy's over-the-top, energetic personality might be seen as a defence mechanism she developed to deal with the trauma she has experienced.

The mental health of the other women is also shown to have been affected; namely Cyndee who suffered from a bout of 'Hulkamania' in which the sufferer believes she is, and imitates the voice of, the famous wrestler Hulk Hogan, as seen in Figure 1.



Figure 1) A flashback of Cyndee's 'Hulkamania' during their time in the bunker, as seen in Episode 12: Kimmy Goes to Court! [2].

Kimmy is able to talk her down from her 'bunker madness' by pretending to be fellow wrestler Macho Man, Randy Savage.

Vitamin D Deficiency

Episode 12 confirms that Kimmy did indeed have a vitamin D deficiency [6]; former cult leader Reverend Richard Wayne Gary Wayne tells Kimmy 'not having a vitamin D deficiency certainly suits you.' With no access to natural light for 15 years, this is unsurprising.

Vitamin D is a naturally occurring nutrient made by our bodies in reaction to sunlight, but can also be

obtained through some foods such as salmon and eggs [7]. Vitamin D helps the body utilise calcium in the diet and therefore a deficiency might cause bone pain and muscle weakness.

It is not known what foods would have been available in the bunker, but we would assume only the most basic rations were available. It is therefore likely that the women would have also had deficiencies in other important nutrients.

Light Sensitivity

Photoreceptor cells in our eyes absorb and convert light into electrical signals. These signals are sent through the optic nerve to the brain where they are processed into a visual image [8]. Vertebrates have two types of photoreceptors: cones, which function in bright light and perceive colour; and rods, which function in dim light but does not perceive colour [8].

In the underground bunker where only weak, artificial light is available, Kimmy's vision would have adapted to the dim light by inactivating cone photoreceptors in favour of rods [9]. Over 15 years, it might be speculated that continual inactivity of these photoreceptors may result in better visual adjustment to dimmer lighting and increased sensitivity to bright light.

Conclusion

Living underground for such a long time would unquestionably present a variety of health problems. 'The Unbreakable Kimmy Schmidt' does allude to some of these problems but we would expect evidence of this to be more pronounced after 15 years.

While some of the more obvious effects are discussed above, there might also be more obscure underlying issues present depending on the medical care Kimmy received during her time underground. After 15 years with no medical care, one could have any number of undiagnosed and untreated medical conditions, accelerated by the potential absence of regular hygiene regimes such as showering. This might include potential respiratory problems due to poor air quality, damp and mould as well as a weak immune system due to the body not having exposed to everyday germs.

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