Viewpoint: A Sense of Belonging. Today’s Pinball Playing as a Contribution to Good Mental Health

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*Abstract*— The purpose of this viewpoint is to address the mental health concept of belonging generated by the playing of pinball machines today. According to research the sense of belonging, through social support networks and community activities, is fundamental to mental health, to which your ability to cope with the stressors of daily life, increase with increasing social interactions. A social activity builds social cohesion or social capital and the more an individual is active and maintaining connections with others, the greater contribution to mental health. Previous research has suggested that increasingly widespread social isolation, loneliness and social disconnectedness globally is linked to risk for mental health problems. With this background in mind there is a strong evidence-based invitation to strengthen any action taken to maximize a feeling of belonging in the settings of everyday life as crucial parts of mental health and well-being among populations, communities as well as individuals. For this viewpoint, the author combined his many years of expertise in mental health and went through bibliographic databases / search engines to identify, select, and critically assess relevant academic articles and other papers on pinball. Nonetheless, due to the nature of this viewpoint, it does not reflect a systematic approach/review process, comprehensive evaluation, or aims to provide a full overview of this topic by using standardized research designs. Instead, by looking exclusively and with careful consideration on these academic papers and literature written on pinball machines merged with research on the concept of belonging, it is argued that engagement in pinball playing may open the field of research and give rise to the importance of promoting sense of belonging as a subjective feeling of deep connection with a social group, which is associated with enhanced mental well-being. The current viewpoint represents an effort to advancing our understanding of pinball playing, its raison d'être and especially in population health research. As a result, the viewpoint avoids discussing other arcade video games, digital formats/versions or comparisons. However, on research into the development of digital and video gaming, pinball playing thus still constitutes an important link in their history, development, and the encouragement of connectedness. Pinball machines have long been part of everyday culture. But framed as a tool for enhancing mental health wellbeing within local communities, constitute a hypothesis that exigently deserves future research.

Keywords— pinball, arcade, game studies, mental health, belonging.

# Introduction

Whoever spends time playing pinball machines today might experience the nostalgic or new feeling encapsulated by a fascinating gameplay, landscapes, storytelling and entertainment. In which the player is challenged and delighted at the same time and where pinball playing immerses the senses completely as one attempts to absorb it all [1]. Today’s pinball machines are experiencing a resurgence in popularity globally. From across the history, it has been collected (privately, in bars and in pinball museums) and restored by fans of ‘retro gamers’ combined with continuous manufacturing of pinball machines, which underlines the present interest of pinball [2][3][4][5][6]. Not least a scientific interest as well. For an example, a recent study indicates, that pinball is not solely a collector’s item but also a complex game, that contain original narratives in the pinball games. Drawing on game theory and interviews, the article demonstrates that the narratives are not direct adaptations from the urtext, but rather narratives that arise through gameplay [2]. In 2020 Edler shows how modern pinball machines are equipped with sophisticated map-like playfields that allow pinball players to immerse into a rapidly changing spatial story including triggers for the individual and social construction of landscapes. According to the author, pinball gaming's success can be attributed in part to the overloaded transfer of spatial information, cognitive challenges, and defining themes [3]. In a study of Filiciak 2020, the author is reflecting on the methods the pinball community does to maintain its artifacts and to stimulate social interaction around those objects, which may also help replicate at least part of the procedures required to preserve digital art as well [4]. Almost sixty years of significant expansion in the pinball industry were studied historically by Tellier in 2017, and the results show that the reasons for the industry's downturn in the 1990s were more subtle. As reported by the author, the fall was mostly caused by failure to alter their business strategy. This inability to innovate significantly was caused by the reliance on operators [6]. From its humble beginnings and through its most turbulent times from a gambling device, a rebellious image and the supposed connection to crime and to an amusement device, the pinball machine has shown perseverance, adaptability and ingenuity [5]. Despite pinball remains a niche, (although with increased global outreach [2]), it is argued that for research into the development of digital and video games including modern pinball games (e. g. virtual pinball machines, internet connected pinball machines with LCD screens, digital pinball gaming), it still constitutes an important link in their history and have set early standards for the arcade and home video games industry as well as digital games [2][3][4][6]. Not least reflected in the encouragement of connectedness. This viewpoint aims to show that engagement in pinball playing may still open the field of research and give rise to the importance of promoting sense of belonging as a subjective feeling of deep connection with a social group, which is associated with enhanced mental well-being. For this viewpoint, the author combined his many years of expertise in mental health and went through bibliographic databases / search engines such as PubMed and Google Scholar to identify, select, and critically assess relevant articles, papers, theses, literature, gray literature, books, abstracts, preprint, conference proceedings from academic publishers, by using thematic keywords such as pinball, pinball machine, and on the concept of belonging. However, due to the nature of a viewpoint, it does not reflect a systematic approach/review process, comprehensive evaluation or aims to provide a full overview of this topic by using standardized research designs. Also, this viewpoint is not presenting original data or related to a research project. Instead, the current viewpoint represents an effort to advancing our understanding of pinball playing, its raison d'être and especially in population health research given the widespread social isolation, loneliness and social disconnectedness globally. In that sense, pinball framed as a tool for enhancing mental health wellbeing within local communities, constitute a hypothesis that pressingly deserves more research and experimental academic attention.

# Academic Contributions on Pinball Machines

In general, literature and research on pinball is in their infancy. It is scarce, often insufficiently examined, overestimated, and strongly heterogeneous with often poor methodological quality [2][6]. According to Banfi 2022, pinball has somehow gone under the academic radar [2]. It is undertheorized and under researched despite a significant number of existing books, databases, social media groups, documentaries, films and websites targeted toward pinball enthusiasts, fans, collectors and professional pinball players [2]. It has also been criticized for not having a critical and analytic attitude towards its subject due to the literature has been written primarily by collectors and enthusiasts [4][6].

Even so, research involving pinball machines and pinball playing, outlines a variety of aspects. For instance, often historical perspectives are represented, where multiple studies refer to ancestors of modern pinball machines, such as the creation of the French game “Bagatelle” to the rise of a serious pinball industry that began in the late 1920s. In the early 1930s electric coin-operated games were introduced followed by the creation of flippers in 1947 which rapidly altered the pinball industry. By 1950, the perception of the game changed from a novelty device to a gambling device, bribery, vice and organized crime for such devices into areas where they were prohibited. The political perspective changed in the 1970s admitting that pinball was a game of skill which rapidly altered the pinball industry once again to high sales until the beginning of the 1990s. Of these historical perspectives, some papers include the descriptions of the game (mechanically and electronically) as well as description and analysis of the purpose of the pinball game itself. [3][4][5][6][7]. From historical perspectives to psychological and psychiatric perspectives, a case study from 1992 involves a young man who is addicted to playing pinball machines, for which the author argued that it would be beneficial to adapt the criteria for pathological gambling for use in the monitoring of gaming machine addictions [8]. While some critical law essays discuss whether pinball machines should be outlawed or regulated based on the argument that pinball is a form of gambling [2], design and visualization perspectives are for an example represented in a study from 1983. At that time, it was reported in the Journal of Popular Culture, that male pinball players may be attracted by the machine’s sexual graphics [9]. (See also studies of Edler [3][17] and under section I). By using Internet-based pinball design and history resources, and a shareware package, Jacobs and Egert are, in their study, able to surpass the original pedagogic goals of a pinball analysis assignment [10]. While one paper is concerned with the control of a pinball machine in a technological perspective [11], another study is concerned with designing pinball games to teach computer science students about how to interface to mechanical systems in a fun and motivating way [12]. One study investigates programming logic executive operating system in pinball machines [13], other studies comparing the role of rules in the activity facilitated by ‘playable artifacts’ like single-player computer games or pinball machines [14] or investigating game sound in the mechanical arcades such as pinball machines [16]. Some studies involve pinball machines in clinical interventions [18][19]. The first study concludes that severely and profoundly mentally retarded adolescents could acquire and generalize use of an electronic pinball machine leisure skill effectively and learn to exhibit appropriate social behavior. The other study of two autistic children in an experimental environment consisting of different devices such as a pinball machine concludes that performances could be sustained to demonstrate the normal effect of two schedules of reinforcement, to develop the coin as a generalized reinforcer, and to control the children’s performances by the presence or absence of stimuli correlated with reinforcement or nonreinforcement. For narrative perspectives and business case perspectives, see also under section I. Additionally, few articles explore pinball’s social impact with in-depth explorations of playing pinball in their real-life setting [4][15][20] which will be further explored under section V.

# Struggling to Belong

According to Allen et al. 2021,a substantial quantity of people suffers from social isolation, loneliness, and a lack of connection to others [21]. It has become increasingly widespread and achieved global attention, where to its cumulative interest is driven by the emerging field of substantial and widely accepted research on social isolation, social disconnectedness and loneliness [22][23][24] with overlaps to social distancing, rising distrust of others, stress symptoms, social withdrawal, depressive symptomatology, lacking companionship, suicides, and a wide coexistence with common mental disorders. In other words, many people struggle to feel a sense of belonging and social disconnection has become a concerning trend worldwide for reasons such as social mobility, a hyper individualized and heavily independent culture, shifts in technology and digitally driven civilization, broken family and community structures from former nuclear family-based society, cultural and ethnic values have been threatened, and the pace of modern life accelerated by e. g. COVID-19 pandemic [21]. Given this context there is a growing recognition that targeted promotion, prevention and treatment in the settings of everyday life is necessary and effective. In that sense there is a strong invitation to strengthen *“any action taken to maximize mental health and well-being among populations and individuals that focuses on improving social, physical and economic environments that aﬀect mental health, and enhancing the coping capacity of communities as well as individuals alone are unlikely to make a signiﬁcant diﬀerence in reducing the burden of disease caused by poor mental health”* [25].

On that note, regardless of age, gender, income, physical or mental health issues, or disability, being able to join and participate in e. g. diverse leisure activities and feeling a sense of belonging and commitment to something and someone are crucial parts of mental health for everyone [25]. Helping people build and maintain a fundamental feeling of belonging is increasingly important because it is a key component of what makes us human.

# The Concept of Belonging

According to research the sense of belonging through social support networks and community activities is fundamental to mental health, to which your ability to cope with the stressors of daily life, increase with increasing social interactions [26][27][28]. The subjective feeling of connection with social groups is deep rooted because the opposite is associated with a lack of meaning and reduced longevity [28]. Belong often refers to being a member of a formal or informal group such that an individual’s connectedness (face-to-face or not) with the community and sense of identity are strengthened [26]. It encompasses concepts such as civic virtues, social inclusion and moral reflection [28]. According to Donovan, 2006 there might be synergistic effects on maintaining good mental health, that not only adds a connectedness dimension like feeling valued by others and mattering, but also is likely to expand the cognitive activity involved regarding strong personal support group due to regular involvement in the social activity [26]. A social activity builds on social cohesion or social capital and the more an individual is active and maintaining connections with others, the greater contribution to mental health [26].

# Pinball: A Sense of Belonging

# Only few academic studies have ever been carried out as case studies that somehow allowed in-depth, multi-faceted explorations of playing pinball in their natural real-life settings. These case studies are particularly useful demonstrations since they provide some kind of insights and aspects reflecting the concept of belonging when playing pinball machines. Despite these studies may be approached in different ways and different settings, the central tenet being the need to explore pinball playing in the everyday contexts in which they occur.

In one case study from 1981, [15] two public settings were observed where pinball was regularly played. The study demonstrated the public's perception of pinball at the time which was shown to have an aura of deviance and strong negative connotations—shaped the game's etiquette and how it acts to deter or draw in potential players. But it was also shown that these meanings were vastly out of proportion to the game's apparent costs, benefits, and risks, and that playing pinball in its typical public environment seemed to be no more of a socially expressive activity. For certain players (especially young, unmarried males), it may have a unique attraction. Another case study from 2020 examines the Polish pinball machine collectors and demonstrates how social and technical factors are crucial and where a partially institutionalized network for preservation is currently in place [4]. “*Reﬂecting on the strategies that the pinball community uses to preserve its artifacts and to animate social activity centered upon those artifacts, can help facilitate modeling at least some practices needed to preserve digital art, practices more inclusive than the traditional approaches, and uniting, even if imperfectly, rather than dividing various social groups”* [4]. It is stated that fan efforts are a chance to preserve objects such as pinball machines that prove a point and animate social activity around them (such as vibrant local and international community rooted in the commitment to their game, the competitions, as well as the admiration for its beauty) as a chance to reproduce, or just to talk about the social aspects of the setup that goes along with pinball gaming. Thirdly, in 1973, Manning & Campbell demonstrates in the case study, some of the social-psychological themes or meanings generated by the playing of pinball machines by collegiates and identify some of the correlates of the different definitions of the situation brought to the game [20]. In order to systematizing social types based upon the nature of their involvement in the game, Manning & Campbell divides them into three categories: the escapist, the competitive and the social type. Whereas the escapist, through concentration on good reflexes, uses the game to get away from e.g. ordinary situations or harsh realities, the competitive player takes the game seriously. One may argue that both the escapist and partly the competitive player (an individual concern, but hardly an isolated event) indicate individual preferences. The main fascination is to beat the machine or as Banfi 2022 puts it, the playing of pinball might just be a challenge to control the metal ball to the best of their ability –testing the Self to master its own extension [2]. Conn writes that the interaction between the pinball player and his machine is a relationship of greater depth and openness, an expended physical and mental energy and where the player interacts with the machine until he masters it or until it masters him [15]. With the social types, however, Manning & Campbell observe that the pinball machine could also be considered as a tool for meeting others or be with people. It provides everything from a greater unity to the group and an easy avenue for meeting people to sharing a common bond where pinball machines serve to facilitate this personal contact and establishing a friendship, a conversation, a vocabulary or just basis for others to initiate relationships [20]. It does not require any organization and it is cheap, easy, fast and fun, the authors observe [20].

Pinball playing may create individual preferences [2] but like with the observations from these case studies, it may still seem to happen in social expressive settings like ‘barcades’ (A bar - drinking establishment - equipped with arcade games), pinball museums, private enthusiastic collectors and in entering pinball tournaments [2]. According to Filiciak 2020 the cultural heritage, the nostalgia and retro-setup of pinball playing could in that sense be depicted as a fan community, a hobby, a meeting place and a small historical niche [4]. In 1981, it was also noted that the setting allows secondary association with others preparing to cluster around the pinball machines and identify directly or indirectly with pinball play [15]. In many ways, pinball playing might be considered as a social act as an opposition to former perceptions and associations such as gangsterism, gambling, or lonely escapes [15]. Today some communities use spare parts, sharing knowledge and conservational approaches, and for others it is a community or just people from the street united by the fondness for beer and fun-oriented and fan-fueled exhibits according to Filiciak 2020 [4]. To the best of our knowledge, no research has been conducted to compare the circumstances of playing pinball, such as playing alone versus playing with other players in barcades, arcades, at competitions, or in museums.

Based upon these different case studies, it could be argued that engagement in pinball playing may promote a sense of belonging, which is associated with enhanced mental well-being. The sense of belonging, through participation in pinball playing settings like ‘barcades’, pinball museums, private collectors and at tournaments, encompasses a connectedness and a social cohesion to which it may result in a strong personal support group. *”Around the pinball machine different reception frames can be constructed. In the center is the pinball machine itself, which is directly received by players or fellow players. From the outside the pinball machine is received by spectators. The box directly and the game itself indirectly via the players. The community forms the outermost frame. The community receives pinball machines indirectly via the narration of the spectators and players. Anecdotes are an essential part of this frame.”* [29].

Pinball playing may seem to encourage some level of interactivity between the pinball players as part of the game itself, or external as well based on e.g. interest, hobby, nostalgia and fascination. In order for pinball players to create a positive link between belonging and such as entertainment, creation of common ground or experience reciprocation, it could be reasoned that pinball playing must somehow support both social contest and social collaboration including facilitating interaction within the game and outside. Even though belonging appears as a personal feeling, it could be reasoned that it often exists and is facilitated within a dynamic social pinball playing milieu and interact with social structures, norms, rules, contexts, individual’s character, identity, perceptions and experiences [21]. Using a four-point framework on sense of belonging developed by Allen et al 2021 [21], it could be claimed that – ‘competencies’ like arcade skills and abilities, ‘opportunities’ to connect like at barcades or in tournaments, ‘motivations’ like the inner drive of e.g. nostalgia, fascination and gameplay, and ‘perceptions’ like the subjective feelings and cognitions concerning their pinball experiences - are all central elements, that emerge within the pinball playing environment and dynamically reinforce and influence one another over time.

# In Conclusion

From the narrow points raised here all together, it could be claimed that engagement in pinball playing may promote a sense of belonging as a subjective feeling of deep connection with a social group, which is associated with enhanced mental well-being.

Previous research has suggested that increasingly widespread social isolation, loneliness, and social disconnectedness globally is linked to risk for mental health problems. With this background in mind there is a strong evidence-based invitation to strengthen any action taken to maximize a feeling of belonging in the settings of everyday life as crucial parts of mental health and well-being among populations, communities as well as individuals. According to the World Health Organization (WHO) Mental health is a *“state of mental well-being that enables people to cope with the stresses of life, realize their abilities, learn well and work well, and contribute to their community. It is an integral component of health and well-being that underpins our individual and collective abilities to make decisions, build relationships and shape the world we live in.”* [30]. Investigating potential preventive factors and applicable strategies even such as participation in pinball playing for reducing mental health problems and for promoting good mental health is thus important. It is hypothesized that such pinball activity provides important contexts (organized e.g. structured tournaments or non-organized and un-structured e.g. barcades, museum visits) and may offer opportunities to develop relationships and increase their connectedness, emphasis on inclusion and a sense of belonging.

More quality research is evidently needed to be conducted to draw any firm conclusions or associations. The limited studies in general, an undertheorized field and the lack of data make conclusions uncertain and need to be further explored in addition to the scientific disagreement regarding conceptualization and measurement of belonging and how a person should go about increasing their sense of belonging [24]. So far as is known, there is currently no research conducting on the impact of participation in pinball playing on mental health, though such research would be highly relevant from a public health perspective. Future research may shed light on this possible association and unravel possible mechanisms.

The current viewpoint represents an effort to advancing our understanding of pinball playing, its raison d'être and especially in population health research**.** Despite, a potential scientific debate over whether pinball machines should even be related to health game research ideas and such as gamification [31], it seems reasonably that participating and joining in a social activity such as pinball playing may help people build, maximize and maintain a fundamental feeling of belonging in a way that may aﬀect mental health positively. Within this context, pinball playing may well serve as opposite pole to social isolation, social disconnectedness and loneliness. Since many people struggle to feel a sense of belonging and social disconnection has become a concerning trend worldwide, pinball playing may be framed as a valuable tool for enhancing mental health wellbeing within local communities. Not least it might have the opportunity to empower various target groups such as found in the Project Pinball Charity. Since 2011 The Project Pinball Charity, headquartered in Bonita Springs, Florida, places pinball machines in Children’s Hospitals, Ronald McDonald Houses, and Assisted Living Facilities across the United States to provide recreational relief to patients, family members, and hospital staff [32]. Although no research has yet been conducted on this project, it reflects a supplemental interest, relevance, timeliness, and attention to the aforementioned research, that keeps challenging outdated narratives of pinball machines. In addition, examples like public running events dedicated to pinball playing such Pinball Expo [33], IFPA World Pinball Championship [34] and Pinfestival [35] may also suggest the impact of playing pinball entail social interaction and thereby a sense of belonging.

That being the case, grasping its promising relevance and appeal, a continuous international proactive and future health research cooperation will be of crucial significance, to which may open a window of enhanced insights on effective solutions and approaches of games that improve good mental health for individuals and social communities.

##### References

1. Rossignoli M. The complete pinball book. Collecting the game and its history, 3rd edn. Schiffer Publishing Ltd, Atglen; 2011
2. Banfi R. Toward a Study of Pinball. Games and Culture. May 2022. [DOI:10.1177/15554120211058315]
3. Edler D. Where Spatial Visualization Meets Landscape Research and “Pinballology”: Examples of Landscape Construction in Pinball Games. KN J. Cartogr. Geogr. Inf. 2020; 70, 55–69. [DOI:10.1007/s42489-020-00044-1]
4. Filiciak M. Playful Machines and Heritage: How to Prepare Future Cultural Histories? Arts. 2020; 9(3):82. [https://doi.org/10.3390/arts9030082]
5. Black J. Pinball: The Misunderstood Game of Amusement. In Milestones, Pulaski Technical College. 2011 Volume 7. [http://danny.cdyn.com/Milestones\_2011.pdf#page=22]
6. Tellier A. ‘Whatever happened to the ‘great escape’? Lessons from the rise and decline of the pinball ecosystem’, Int. J. Technology Management, 2017; Vol. 75, Nos. 1/2/3/4, pp.121–141. [DOI:10.1504/IJTM.2017.10006143]
7. Huhtamo E. Slots of fun, slots of trouble: An archaeology of arcade gaming. In Raessens, J., Goldstein, J. (Eds.), Handbook of computer game studies 2005. 3–21. [DOI https://doi.org/10.7238/a.v0i7.761]
8. Griffiths MD. Pinball wizard: A case study of a pinball addict. Psychological Reports,1992 71, 160-162. [https://doi.org/10.2466/pr0.1992.71.1.160]
9. Kaplan S & Kaplan S. A research note: Video games, sex, and sex differences. Social Science. 1981 Vol. 56, No. 4 pp. 208-212 [https://www.jstor.org/stable/41886696]
10. Jacobs S & Egert CA. Kickback: turning game history students into pinball designers. In Proceedings of the 2008 Conference on Future Play: Research, Play, Share (Future Play '08). Association for Computing Machinery 2008; 272–273. [https://doi.org/10.1145/1496984.1497051]
11. Lichtenberg G & Neidig J. Discrete event control of a pinball machine. IFAC Proceedings Volumes. 2004; 37. [https://doi.org/10.1016/S1474-6670(17)30735-8]
12. Wong, D, Earl D, Zyda F, Zink R, Koenig S, Pan A, Shlosberg S, Singh J & Sturtevant N. Implementing games on pinball machines. FDG '10: Proceedings of the Fifth International Conference on the Foundations of Digital GamesJune 2010 Pages 240–247 [https://doi.org/10.1145/1822348.1822380]
13. Coriale M. "The Williams Advanced Pinball Programming Logic Executive Operating System," in IEEE Potentials, 2022; vol. 41, no. 2, pp. 34-38.
14. Leino OT. Death Loop as a Feature. Game Studies. 2012; Volume 12 issue 2. [doi: 10.1109/MPOT.2021.3112665.]
15. Conn S. "The Social Context of Pinball: The Making of a Setting and Its Etiquette." 1981 Paper presented at the Seventh Annual Meeting of the Association for the Anthropological Study of Play. [http://hdl.handle.net/11122/10734]
16. Collins K. Game Sound in the Mechanical Arcades: An Audio Archaeology. Game Studies. 2016; volume 16 issue 1. [http://gamestudies.org/1601/articles/collins]
17. Edler D. Taunting Landscapes in Pinball Games. In: Edler, D., Kühne, O., Jenal, C. (eds) The Social Construction of Landscapes in Games. RaumFragen: Stadt – Region – Landschaft. Springer VS, Wiesbaden, 2022. [DOI: 10.1007/978-3-658-35403-9\_9]
18. Ferster CB & Demyer MK. The development of performances in autistic children in an automatically controlled environment. Journal of chronic diseases, 1961; 13, 312–345. [DOI: 10.1016/0021-9681(61)90059-5]
19. Hill JW, Wehman P & Horst G.Toward Generalization of Appropriate Leisure and Social Behavior in Severely Handicapped Youth: Pinball Machine Use. Journal of the Association for the Severely Handicapped. 1981;6(4):38-44. [https://doi.org/10.1177/154079698200600406]
20. Manning PK & Campbell B. Pinball as Game, Fad and Synecdoche. Youth & Society, 1973; 4(3), 333–358. [https://doi.org/10.1177/0044118X7300400305]
21. Allen KA, Kern ML, Rozek CS, McInereney D, Slavich GM. Belonging: A Review of Conceptual Issues, an Integrative Framework, and Directions for Future Research. Aust J Psychol. 2021 Mar 10;73(1):87-102. [https://doi.org/10.1080/00049530.2021.1883409]
22. Surkalim DL, Luo M, Eres R, Gebel K, van Buskirk J, Bauman A, Ding D. The prevalence of loneliness across 113 countries: systematic review and meta-analysis. BMJ. 2022 Feb 9;376:e067068. doi: 10.1136/bmj-2021-067068.
23. Luhmann M, Buecker S, Rüsberg M. Loneliness across time and space. Nat Rev Psychol. 2023;2(1):9-23. doi: 10.1038/s44159-022-00124-1. Epub 2022 Nov 7.
24. Na PJ, Jeste DV, Pietrzak RH. Social Disconnection as a Global Behavioral Epidemic-A Call to Action About a Major Health Risk Factor. JAMA Psychiatry. 2023 Feb 1;80(2):101-102. doi: 10.1001/jamapsychiatry.2022.4162.
25. Hinrichsen C, Koushede VJ, Madsen KR, Nielsen L, Ahlmark NG, Santini ZI, Meilstrup C. Implementing Mental Health Promotion Initiatives-Process Evaluation of the ABCs of Mental Health in Denmark. Int J Environ Res Public Health. 2020 Aug 11;17(16):5819. doi: 10.3390/ijerph17165819.
26. Donovan RJ, James R, Jalleh G & Sidebottom C. Implementing Mental Health Promotion: The Act-Belong-Commit Mentally Healthy WA Campaign in Western Australia. International Journal of Mental Health Promotion, 2006 8(1), 33–42. [https://doi.org/10.1080/14623730.2006.9721899]
27. Koushede V, Nielsen L, Meilstrup C & Donovan R.J. From rhetoric to action: Adapting the Act-Belong-Commit Mental Health Promotion Programme to a Danish context, International Journal of Mental Health Promotion, 2015 17:1, 22-33. [https://doi.org/10.1080/14623730.2014.995449]
28. Donovan RJ, Koushede VJ, Drane CF, Hinrichsen C, Anwar-McHenry J, Nielsen L, Nicholas A, Meilstrup C, Santini ZI. Twenty-One Reasons for Implementing the Act-Belong-Commit-'ABCs of Mental Health' Campaign. Int J Environ Res Public Health. 2021 Oct 21;18(21):11095. [doi: 10.3390/ijerph182111095]
29. Krummenacher, D. "Open-End Storytelling in Pinball Machines: A Summary of the Narrative Elements and Structures in Pinball Machines". Narrative Mechanics: Strategies and Meanings in Games and Real Life, edited by Beat Suter, René Bauer and Mela Kocher, Bielefeld: transcript Verlag, 2021, pp. 177-196. <https://doi.org/10.1515/9783839453452-009>
30. WHO. Mental Health Key Facts. 2022. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>
31. Fleming T, Poppelaars M and Thabrew H. The role of gamification in digital mental health. World Psychiatry, 22: 46-47. 2023. https://doi.org/10.1002/wps.21041
32. The Project Pinball Charity. Website: <https://projectpinball.org/about/>
33. Pinball Expo 2023 <https://pinballexpo.com/>
34. IFPA World Pinball Championship <https://www.ifpapinball.com/ifpa17/>
35. Pinfestival 2023 <https://www.pinfestival.com/>