

Literature Review: The Effectiveness of PACMAN for Children and Young People with anxiety disorders and obsessive-compulsive disorder.

Abstract

A range of different anxiety disorders are prevalent in children and young people across the country, many of which specialist CAMHS sees. Cases of OCD are also prevalent among this group. Currently CBT is the frontline therapeutic intervention offered to these young people, however due to cost and time constraints faced by the NHS and CAMHS other interventions are utilised. For example, PACMAN and other forms of parent programmes that aim to prompt a change in parental behaviours to support young people struggling with their mental health have been implemented to help. PACMAN is a programme that targets parental accommodation to support adolescents with anxiety and OCD, this literature review aims to examine the effectiveness of this as requested by Sussex CAMHS. PACMAN was developed from a parent programme called SPACE. Due to the gap in the literature on PACMAN, studies on SPACE have been used. Also included are studies testing parental accommodation and its effects on symptom severity. No direct literature was used on PACMAN specifically, due to no research being found to fit in the relevant criteria. Evidence supported the effectiveness of the programme SPACE. Research into the link between parental accommodation and both anxiety and OCD symptom severity also supports this conclusion of effectiveness. Therefore, this literature review found that research supports the notion that a programme like PACMAN, that targets accommodating parental behaviours to reduce their children's anxiety and OCD distress, should be effective for young people struggling with their mental health. However, no research was found regarding PACMAN directly. This is an issue, as it means no data was collected specifically from a PACMAN programme that has been run or their effectiveness evaluated. Thus, the effectiveness of PACMAN cannot be confidently determined. Research should be undertaken surrounding the use of this intervention directly before confirming its effectiveness for young people struggling with anxiety disorders and OCD.

1.0 Introduction

1.1 Background

Anxiety disorders are a particularly prevalent mental health difficulty in children and young people. It has been found that anxiety disorders affect about 6.5% of young people around the globe (Polanczyk et al., 2015). Obsessive-compulsive disorder (OCD) is another disorder that clinicians are increasingly seeing among young people. For example, it has been found that in 64% of individuals OCD symptoms emerged before the age of 25 years, with a peak onset age of 14.5 years old being found (Solmi et al., 2022). The current baseline treatment implemented for these young people is Cognitive Behavioural Therapy (CBT) as supported by the National Institute for Health and Care Excellence (NICE) (Friedberg et al., 2021), which has been found to reduce anxiety symptoms to a point of being 'free from anxiety disorder diagnosis' in approximately 49% of youth participants (James et al., 2020). However, this intervention is expensive to run (Taylor et al., 2022; James et al., 2020) and is not always effective for all individuals. For example, up to 50% of children with anxiety disorder have been found not to retain remission with treatment of CBT (Wang et al., 2017). The current strain on expenses and resources the National Health Service (NHS) and Children and Adolescent Mental Health Service (CAMHS) is experiencing has led to other programmes being tested and implemented across different teams to attempt to target these issues.

PACMAN is a parent group, developed from the work surrounding parental accommodation, that aims to reduce symptom severity and distress for children and young people with anxiety disorders and OCD. This literature review aims to examine the existing literature in this area to study the effectiveness of the programme in doing this.

1.2 Definition of PACMAN

PACMAN is a Parent and Carer Programme for Youth Anxiety and OCD which focuses on parental behaviours towards their children rather than addressing the child or young person's behaviours directly. PACMAN as a programme has been developed from Lebowitz's SPACE (SPACE: Supportive Parenting for Anxious Childhood Emotions) which aims to gradually develop parental behaviour. It aims to recognise parental accommodations in place that could negatively impact the young person's disorder outcomes (Lebowitz, 2021; Lebowitz et al., 2014). From this, parents are encouraged to alter these behaviours, being advised to distance themselves from their children's anxiety.

PACMAN has run in Sussex CAMHS since 2015. Specifically, it has run 6 instances per year in West Sussex and 3 instances per year in East Sussex.

The SPACE programme is a parent-based intervention for parents of children and young people with anxiety developed at Yale University. It aims to teach parents skills that enable more supportive behaviours towards their children while also targeting reduction of accommodations parents may have put in place that negatively impact their child's outcomes (Lebowitz et al, 2014; Dekel et al, 2020). This is an intervention that is built on the same theoretical basis of PACMAN, and what the development of PACMAN referenced to.

1.3 Theoretical underpinnings of PACMAN

Parental, also known as family, accommodation refers to behaviours that family members may engage in that facilitates the young person's anxiety or OCD symptoms. This could be where parents engage in rituals or routines that negotiate with their child's anxiety behaviours, for example supporting avoidance (Lebowitz et al., 2012). Parental accommodation has been found to be correlated significantly with symptom severity and clinical outcomes of young people with OCD (Lebowitz, Panza, & Block, 2016), where a reduction of parental accommodation has been linked to a significant improvement of OCD symptoms (Lebowitz et al., 2012). Parental accommodation has also been found to impact children and young people's course of anxiety, with an improvement in the effectiveness of treatment outcomes when targeted (Norman, Silverman, & Lebowitz, 2015). Lebowitz, Scharfstein and Jones (2014) found that parental accommodation behaviours were common in mothers of young people with anxiety disorder and OCD. They directly compared the results regarding each disorder and found that the correlation between the levels of accommodation and young person distress was similar.

Due to the wide amount of research providing support for how parental accommodation feeds into childhood anxiety and OCD, programmes have been developed to target these behaviours aiming to improve young people's clinical outcomes. Examples of programmes developed based upon this research are PACMAN and SPACE which are interventions that this literature review is evaluating.

1.4 Scope

This literature review was requested by Sussex CAMHS; therefore, it has been conducted with a specific focus on literature regarding children and young people within the UK up to 18 years old. Multiple different academic databases have been searched to analyse the effectiveness of parent and carer programmes targeting parental accommodation for children and young people with anxiety and OCD specifically, directly surrounding the programmes of PACMAN and SPACE.

2.0 Effectiveness of PACMAN in improving mental health outcomes in CYP

No direct literature referring to PACMAN as an intervention was found. Including specific literature evaluating its effectiveness. However, due to PACMAN being built upon the same theoretical basis and run in a largely similar way to SPACE, literature evaluating this programme has been utilised in this review to support the effectiveness of PACMAN as an intervention for young people with mental health difficulties.

2.1 Literature evaluating SPACE

In terms of research conducted specifically on the SPACE programme's effectiveness, results have been positive.

A feasibility study was conducted by Dekel et al. (2020) that examined the feasibility of the parent group intervention SPACE. They found the implementation of SPACE to be feasible and collected parental reports which stated that they found a decrease in parental accommodation and symptom severity in their children with anxiety and OCD. Though this was just a feasibility study, these parent reports do provide positive support for the effectiveness of SPACE as an intervention.

These findings are upheld by a study by Lebowitz et al. (2020), where they conducted a study comparing the effectiveness of SPACE for young people with anxiety disorder. They found that SPACE was non-inferior to the CBT conditions, and that both treatment options resulted in high treatment credibility and satisfaction ratings. Therefore, Lebowitz et al. (2020) found that SPACE is a viable alternative to CBT for treating young people with anxiety disorder and reducing their symptom severity.

More in-depth case studies have also been published that support these findings. For example, Lebowitz and Majdick (2020) outline a specific case description of a use of SPACE for a young person with social anxiety disorder. Anxiety Disorder Interview Schedules (ADIS) were conducted with the young person and his parents separately at the end of his treatment which found that his symptom severity decreased, parent's accommodation behaviours decreased, along with some of the young person's violent behaviour that he exhibited. This study allows for more qualitative data to support the effectiveness of SPACE and parentally led interventions that target parent accommodation in helping young people with anxiety disorder.

An in-depth case study was also conducted evaluating SPACE's effectiveness for a young person with OCD (Lebowitz and Shimshoni, 2018). They found that parental accommodation was reduced following treatment with SPACE, which in turn led to improvements in the young person's OCD symptom severity. Therefore, SPACE has been found to be an effective treatment option for young people with OCD as well as other anxiety disorders.

As CBT has been a long found effective treatment for anxiety in children and young people (Cartwright-Hatton et al., 2004), supported by the National Institute for Health and Care Excellence (NICE, 2013) as the frontline intervention, it could be argued that an alternative intervention like PACMAN or SPACE shouldn't be administered first. However, considering that access to mental health support for young people in the UK is greatly disrupted by long waiting lists and limited provisions (Reardon et al., 2018), a group parent-led programme like PACMAN and SPACE could be time and resource effective. Long term interventions like CBT are incredibly resource intensive and have high expenses due to this (Taylor et al., 2022; James et al., 2020) so interventions like PACMAN could be a solution.

Another reason that interventions like PACMAN and SPACE are beneficial is that, due to being parent-led, they can access certain young people that feel unable to commit to individual therapy due to their anxieties. Within CBT, up to 50% of children and young people have been found to not attain remission (Wang et al., 2017; Dekel et al., 2020). Anxiety is a mental health disorder where struggling to arrive in-person to an appointment may be a key difficulty, thus treatment being administered through parents and carers could overcome this. For example, in the case study by Lebowitz and Shimshoni (2018) the young person was adamant that she did not want individual therapy. The SPACE model provides an effective alternative which improves young people's symptoms without directly needing interaction with them themselves.

2.2 Literature evaluating the correlation of parental accommodation and symptom severity, to support the use of PACMAN/SPACE

There is a large evidence basis for the correlation between anxiety symptoms and parental accommodation. Lebowitz et al. (2012) gathered information using interviews and a Family Accommodation Scale for Anxiety (FASA)

from parents of anxious children. They found that accommodation was highly prevalent with parents of young people with anxiety and is associated with symptom severity. This link is supported by Norman et al. (2015) where they directly found that family accommodation effects childhood anxiety's course of illness and impacts treatment outcomes within their literature review. Therefore, this evidence supports the idea that intervention programmes directly targeting parental accommodation, like PACMAN and SPACE, should be effective at reducing anxiety symptoms for young people and children.

A literature search by Lebowitz et al. (2012) was also conducted which found that parent accommodation is associated with treatment outcomes for adolescents with OCD and their symptom severity levels. These findings regarding the association of accommodation and OCD symptom severity were upheld in a more recent review by Lebowitz, Panza and Bloch. (2016). Therefore, the literature also supports interventions that target parental accommodation's effectiveness for reducing adolescent's OCD symptom severity.

Lebowitz, Scharfstein, and Jones (2014) conducted a study where they specifically compared how family accommodation applies to distress and symptom severity for OCD and anxiety disorders. It was found that accommodation behaviours were common in mothers of young people with anxiety disorder and mothers with young people with OCD. They also found that accommodation is associated to disorder related distress to a similar degree across both anxiety and OCD.

So overall, due to the interventions of PACMAN and SPACE targeting parental accommodation as a focus, their effectiveness is supported by the research surrounding accommodation in reducing symptom severity for anxiety and OCD.

3.0 Critical Evaluation of the Literature

3.1 Lack of research in the area

The biggest limitation of the literature and this review is the lack of research. No research directly on PACMAN was found during the literature search. The theoretical basis of PACMAN has a larger evidence base, which could provide support for the effectiveness of the framework of the programme. However, the lack of research into the effectiveness of the intervention for young people with mental health difficulties limits the conclusions that could be made determining this.

SPACE as an intervention has research displaying the effectiveness of the programme for young people with anxiety disorders and OCD. This is the intervention that PACMAN is based off, and is also targeting parental accommodation, so could be considered to provide support. But, without direct research about PACMAN's implementation specifically, the results may not completely apply. Future research using PACMAN would be beneficial to specifically determine effectiveness and support its continued usage.

3.2 Methodological approaches

A primary methodological limitation across a large amount of the research reviewed is the lack of a baseline comparison. For example, Dekel et al. (2020)'s feasibility study did not have a control group. Though their study was only a feasibility test, Lebowitz et al. (2020)'s study also did not use a 'no treatment' control group to compare to. The specific case descriptions also did not provide a comparison to a 'no treatment' young person (Lebowitz & Shimchoni, 2018; Lebowitz & Majdick, 2020). The issue with this is that, without comparison to a baseline, it cannot be concluded that the change in symptom severity was due to the treatment implemented. The change seen could have been due to external factors, like environmental changes, which led to the young people's disorder distress lessening. Future research including this baseline comparison would be beneficial to back the existing research and provide more conclusive conclusions.

Another large limitation is that much of the data used within the literature is parental reports. For example, Dekel et al. (2020)'s feasibility study relied heavily on reports from parents regarding their young people's OCD and anxiety symptom severity rather than a direct assessment of the children themselves. Parent's views of their child's struggles may not be completely accurate, due to being through their own perspective lens. Though parents usually do spend a lot of time with their young people, they are not present in all areas of their lives. For example, at school or with friends. Therefore, it is essential to also have data directly from the children and adolescents who are struggling with their mental health and their own experiences of the effectiveness of interventions like PACMAN and SPACE.

Some of the research did also collect data from the young people themselves, for example Lebowitz et al. (2020) used a range of different questionnaires for the children and parents in parallel. However, much of this was self-report methodology. Though these methods have their strengths, self-report data collection always has the possibility of biases. For example, social-desirability bias could impact the validity of their findings. A young person may know that the researcher wants the intervention to be effective, so could alter their responses to display this. Although the likelihood of this may not be a severe issue, this should be considered when handling self-report questionnaire data on its own. A range of different data types may be most beneficial.

3.2 Samples and participants

One limitation with the current research in this field is that a great amount of the parent participants used were mothers. For example, in Dekel et al. (2020)'s study, 93% of the parents reported from were mothers. Only two fathers participated. This could cause an issue with the generalisability of the findings, as it could mean that these interventions like PACMAN or SPACE may not be as effective when implemented with fathers. Some of the literature used did have both mothers and fathers involved. Lebowitz et al. (2020)'s study had both parents in contact with the study. However, the sessions were only compulsory for the mothers of the young people, they found that fathers were only present for approximately 12% of the sessions.

Another limitation to be considered could be the diversity of the samples involved. A majority of the families were white, heterosexual, with a medium to higher socioeconomic status (Lebowitz et al., 2020). Though the detailed case report by Lebowitz and Shimshoni (2018) did study a family of a young person with two mothers, LGBTQ+ families were a minority within the literature. The lack of a diverse participant range is a limitation similarly to the prior point, it effects the possible generalisability of the findings to a wider population.

A majority of the samples studied were also small scale. For example, the main study on SPACE by Lebowitz et al. (2020) had a total of 97 participants by the post-treatment point, with 48 in the SPACE condition and 49 in CBT. Dekel et al. (2020)'s study also only had 30 families included. The small sample sizes within the literature is a limitation as it also presents a possible issue with the generalisability of the findings to the wider population. A small sample size presents the possibility that the findings may not represent the entire target population, due to not having a range of voices included within the results.

4.0 Conclusion

This review found that the literature supports the conclusion that SPACE as an intervention is effective for children and young people with anxiety and OCD. Though this review did not directly find research on PACMAN, it supports the prospect that it could be an effective programme for supporting young people struggling with anxiety and OCD due being a largely similar intervention. The theoretical framework of these interventions also have a strong base of support, as parental accommodation was found to be correlated to symptom severity and clinical outcomes.

However, as highlighted, there is a large gap in research specifically about PACMAN as a programme itself. Due to being a newer, more location specific intervention, no direct studies have been conducted into its effectiveness. Therefore, no published data has been collected on PACMAN, and no published evaluation of the programme has been made. Thus, the effectiveness of PACMAN cannot be confidently determined. Research should be conducted

on PACMAN specifically before a confident confirmation of its effectiveness supporting young people struggling with anxiety and OCD can be made.

Future research should be conducted into the effectiveness of PACMAN specifically, but also SPACE, to complete the literature support in this field. Specifically, clinical based studies from within the UK evaluating this programme would be beneficial to ensure any results found are likely to be generalisable to the Sussex CAMHS population. A study based on the effectiveness of PACMAN implemented into an NHS CAMHS programme would be particularly useful to support a conclusion of the intervention's effectiveness.

5.0 References

Cartwright-Hatton, S., Roberts, C., Chitsabesan, P., Fothergill, C., & Harrington, R. (2004). Systematic review of the efficacy of cognitive behaviour therapies for childhood and adolescent anxiety disorders. *British journal of clinical psychology*, 43(4), 421-436.

Dekel, I., Dorman-Ilan, S., Lang, C., Bar-David, E., Zilka, H., Shilton, T., Lebowitz, E. R., & Gothelf, D. (2021). The Feasibility of a Parent Group Treatment for Youth with Anxiety Disorders and Obsessive Compulsive Disorder. *Child Psychiatry & Human Development*, 52(6), 1044–1049. <https://doi.org/10.1007/s10578-020-01082-6>

Friedberg, R., Portera, S., Toyama, H., Joves, J., Mehta, A., Giannini, C., Honnert, S. (2021). The Efficacy and Effectiveness of CBT for Youth: A Summary of the Literature. Beck Institute: <https://beckinstitute.org/blog/efficacy-and-effectiveness-of-cbt-for-youth/>

Gosch, E.A., Flannery-Schroeder, E., Mauro, C.F., & Compton, S.N. (2006). Principles of cognitive-behavioral therapy for anxiety disorders in children. *Journal of Cognitive Psychotherapy*, 20, 247–262.

James, A. C., Reardon, T., Soler, A., James, G., & Creswell, C. (2020). Cognitive behavioural therapy for anxiety disorders in children and adolescents. *Cochrane database of systematic reviews*, (11).

Lebowitz, E. R. (2021). *Breaking Free of Child Anxiety and OCD: A Scientifically Proven Program for Parents*.

Lebowitz, E. R., & Majdick, J. M. (2020). SPACE, Parent-Based Treatment for Childhood and Adolescent Anxiety: Clinical Case Illustration. *Journal of Cognitive Psychotherapy*, 34(2), 107–118. <https://doi.org/10.1891/JCPSY-D-19-00028>

Lebowitz, E. R., Marin, C., Martino, A., Shimshoni, Y., & Silverman, W. K. (2020). Parent-Based Treatment as Efficacious as Cognitive-Behavioral Therapy for Childhood Anxiety: A Randomized Noninferiority Study of Supportive Parenting for Anxious Childhood Emotions. *Journal of the American Academy of Child & Adolescent Psychiatry*, 59(3), 362–372. <https://doi.org/10.1016/j.jaac.2019.02.014>

Lebowitz, E.R., & Omer, H. (2013). *Treating childhood and adolescent anxiety: A guide for caregivers*. Hoboken, NJ:Wiley.

Lebowitz, E. R., Omer, H., Hermes, H., & Scahill, L. (2014). Parent Training for Childhood Anxiety Disorders: The SPACE Program. *Cognitive and Behavioral Practice*, 21(4), 456–469. <https://doi.org/10.1016/j.cbpra.2013.10.004>

Lebowitz, E. R., Panza, K. E., & Bloch, M. H. (2016). Family accommodation in obsessive-compulsive and anxiety disorders: a five-year update. *Expert Review of Neurotherapeutics*, 16(1), 45–53. <https://doi.org/10.1586/14737175.2016.1126181>

Lebowitz, E. R., Panza, K., E., Su, J., & Bloch, M., H. (2012) Family accommodation in obsessive–compulsive disorder. *Expert Review of Neurotherapeutics*, 12:2, 229–238. <http://dx.doi.org/10.1586/ern.11.200>

Lebowitz, E. R., Scharfstein, L. A., & Jones, J. (2014). Comparing Family Accommodation in Pediatric Obsessive-Compulsive Disorder, Anxiety Disorders, and Nonanxious Children. *Depression & Anxiety (1091-4269)*, 31(12), 1018–1025. <https://doi.org/10.1002/da.22251>

Lebowitz, E. R., & Shimshoni, Y. (2018). Lebowitz and Shimshoni The SPACE program, a parent-based treatment for childhood and adolescent OCD: The case of Jasmine. *Bulletin of the Menninger Clinic*, 82(4), 266–287. <https://doi.org/10.1521/bumc.2018.82.4.266>

Lebowitz, E. R., Woolston, J., Bar, H. Y., Calvocoressi, L., Dauser, C., Warnick, E., Scahill, L., Chakir, A. R., Shechner, T., Hermes, H., Vitulano, L. A., King, R. A., & Leckman, J. F. (2013). Family Accommodation in Pediatric Anxiety Disorders. *Depression & Anxiety (1091-4269)*, 30(1), 47–54. <https://doi.org/10.1002/da.21998>

Lebowitz, E.R., Zilcha-Mano, S., Orbach, M., Shimshoni, Y. and Silverman, W.K. (2021), Moderators of response to child-based and parent-based child anxiety treatment: a machine learning-based analysis. *J Child Psychol Psychiatr*, 62: 1175-1182. <https://doi.org/10.1111/jcpp.13386>

National Institute for Health and Care Excellence. (2013). *Social anxiety disorder: recognition, assessment and treatment*. [NICE Guideline No. CG159].

Norman, K. R., Silverman, W. K., & Lebowitz, E. R. (2015). Family Accommodation of Child and Adolescent Anxiety: Mechanisms, Assessment, and Treatment. *Journal of Child and Adolescent Psychiatric Nursing*, 28(3), 131–140. <https://doi.org/10.1111/jcap.12116>

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015). Annual research review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of child psychology and psychiatry*, 56(3), 345–365.

Reardon, T., Harvey, K., Young, B., O'Brien, D., & Creswell, C. (2018). Barriers and facilitators to parents seeking and accessing professional support for anxiety disorders in children: qualitative interview study. *European Child & Adolescent Psychiatry*, 27, 1023-1031.

Solmi, M., Radua, J., Olivola, M., *et al.* (2022) Age at onset of mental disorders worldwide: large-scale meta-analysis of 192 epidemiological studies. *Molecular Psychiatry* **27**(1), 281-295.

Taylor, L., Giles, S., Howitt, S., Ryan, Z., Brooks, E., Radley, L., ... & Creswell, C. (2022). A randomised controlled trial to compare clinical and cost-effectiveness of an online parent-led treatment for child anxiety problems with usual care in the context of COVID-19 delivered in Child and Adolescent Mental Health Services in the UK (Co-CAT): a study protocol for a randomised controlled trial. *Trials*, 23(1), 942.

Wang, Z., Whiteside, S. P., Sim, L., Farah, W., Morrow, A. S., Alsawas, M., ... & Murad, M. H. (2017). Comparative effectiveness and safety of cognitive behavioral therapy and pharmacotherapy for childhood anxiety disorders: a systematic review and meta-analysis. *JAMA pediatrics*, 171(11), 1049-1056.